



**STAGE 2 SITE INVESTIGATION PLAN  
LPC #0998290002 – LASALLE COUNTY**

**WEDRON/WEDRON SILICA COMPANY  
3450 2056<sup>th</sup> ROAD  
WEDRON, LASALLE COUNTY,  
ILLINOIS  
INCIDENT NO. 20140173**

**PREPARED FOR:**

Illinois Environmental Protection Agency  
Bureau of Land  
Division of Remediation Management  
Leaking Underground Storage Tank Section  
1021 North Grand Avenue East / P.O. Box 19276  
Springfield, Illinois 62791-9276

**PREPARED BY:**

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March 17, 2014  
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1021 N. Grand Avenue E., P.O. Box 19276  
Springfield, Illinois 62794-9276



Attention: Mr. Hernando A. Albarracin  
Manager

Subject: Stage 2 Site Investigation Plan  
LPC #0998290002 - LaSalle County  
Wedron/Wedron Silica Company  
3450 2056<sup>th</sup> Road  
Wedron, LaSalle County, Illinois  
Incident No. 20140173

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Dear Mr. Albarracin:

On behalf of Wedron Silica Company (Wedron Silica), GZA GeoEnvironmental, Inc. (GZA) is providing the following Stage 2 Site Investigation Plan ("Investigation Plan") to the Illinois Environmental Protection Agency (IEPA) for identifying the extent of impacted soil around a former gasoline underground storage tank (UST) system on the Wedron Silica property at 3450 East 2056<sup>th</sup> Road in Wedron, LaSalle County, Illinois ("Site"). The Investigation Plan is prepared in accordance with Title 35, Subtitle G, Chapter I, Subchapter d, Part 734 of the Illinois Administrative Code.

## EXECUTIVE SUMMARY

In 1998, a former gasoline UST system consisting of two 4,000-gallon gasoline USTs, a short length of piping run (estimated at approximately 5 feet) and two side-by-side fuel dispensers was closed by removal. Five closure soil samples; four from the sidewall of the UST excavation and one from the bottom of the UST excavation were collected during closure of the two USTs. In four of the five excavation closure soil samples, the indicator parameters consisting of benzene, toluene, ethylbenzene, or xylenes (BTEX) were not detected. In one excavation sidewall sample, benzene was detected at a concentration of 3 micrograms per kilogram ( $\mu\text{g/kg}$ ), a concentration one order of magnitude less than the current most stringent industrial/commercial soil cleanup objective, the Illinois Tiered Approach to Corrective Action Objectives (TACO)<sup>1</sup> Tier 1 Class I migration to groundwater soil remediation objective (SRO).

In December 2013, four Geoprobe<sup>®</sup> borings were drilled to depths of approximately 8 feet along the approximate locations of the former piping runs and under the

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<sup>1</sup> Title 35, Subtitle G, Chapter I, Subchapter F, Part 742 of the Illinois Administrative Code.

approximate locations of the former dispensers associated with the two former 4,000-gallon gasoline USTs. Illinois TACO Tier 1 Class I migration to groundwater SROs were exceeded in shallow soil samples for benzene, ethylbenzene, naphthalene, toluene, 1,3,5-trimethylbenzene, and m,p-xylenes. Based on field screening results of soil samples, soil impacts decrease rapidly between the depths of 6 and 8 feet.



For the Stage 2 Investigation, five Geoprobe<sup>®</sup> soil borings, proposed for locations adjacent to and approximately ten feet from the former piping runs and dispensers, will be drilled to depths up to 15 feet. Three soil samples from each boring will be submitted for laboratory analysis of volatile organic compounds (VOCs). If TACO Tier 1 Class I migration to groundwater SROs are exceeded in any of the soil samples, the investigation will be expanded horizontally and/or vertically, and additional borings will be drilled and soil samples collected for laboratory VOC analyses until the vertical and horizontal extents of TACO Tier 1 Class I migration to groundwater SROs exceedances in soil are determined. Upon completion of the evaluation of the vertical and horizontal extents of TACO Tier 1 Class I migration to groundwater SROs exceedances, a Site Investigation Completion Report and Corrective Action Plan, if warranted, will be prepared and submitted to the IEPA and the USEPA.

## BACKGROUND

At the time of closure in 1998, a Site assessment was conducted for two UST systems at the Site consisting of a 20,000-gallon diesel UST with dispenser over the UST and two 4,000-gallon gasoline USTs and fuel dispensers several feet east of the USTs. Both UST systems were closed by removal in November 1998. The UST closures were documented by Terra Environmental Services, Inc. (Terra) of LaSalle, Illinois in a January 1999 report.<sup>2</sup>

The former gasoline UST system consisted of two 4,000-gallon gasoline USTs, a short length of piping run (estimated at approximately 5 feet) and two side-by-side fuel dispensers. Terra documented the collection of five closure soil samples; four from the sidewall of the UST excavation and one from the bottom of the UST excavation. The Site assessment soil samples were submitted for laboratory analyses for gasoline indicator parameters consisting of benzene, toluene, ethylbenzene, or xylenes (BTEX). In four of the five closure soil samples collected from the gasoline UST excavation, the indicator parameters were not detected. In one excavation sidewall sample, benzene was detected at a concentration of 3 micrograms per kilogram ( $\mu\text{g/kg}$ ), a concentration one order of magnitude less than the current most stringent industrial/commercial soil cleanup objective.

Because sampling had not been conducted beneath the piping runs or the dispensers connected to the two 4,000-gallon gasoline USTs, the Illinois Office of State Fire Marshal (OSFM) requested additional Site assessment by Wedron Silica in a letter

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<sup>2</sup> January 1999, Terra Environmental Services, Inc., *Closure of Underground Storage Tanks, Wedron Silica Company, Wedron, Illinois*.

dated July 2, 2013. On November 12, 2013, GZA submitted a Work Plan<sup>3</sup> (“November 12, 2013 Work Plan”) to the OSFM, on behalf of Wedron Silica, for the additional Site assessment. The November 12, 2013 Work Plan with additional background on the former gasoline UST system is provided as Appendix A.

## **SITE AND SURROUNDING AREA**



The area of the former gasoline USTs and the surrounding area are shown on Figure 1. The former gasoline UST system was located south of the unincorporated Wedron community in the Southwest ¼ of the Southwest ¼ of the Southeast ¼ of Section 9, Township 34 North, Range 4 East, Dayton Township, LaSalle County, Illinois. The property of the former gasoline UST system currently has an industrial land use and is projected to remain industrial into the foreseeable future. The closest non-industrial property is located more than 350 feet north of the former gasoline UST system and is off the Site to the north along Alice Street (also known as 3458<sup>th</sup> Road), as shown on Figure 1. The closest residential populations to the former UST system are located in the southern portion of the community of Wedron, approximately 425 feet north on the north side of Alice Street. Mine personnel work in the vicinity of the former USTs and the mine office is located approximately 200 feet east of the former USTs.

## **PHYSICAL SETTING**

The area of the former gasoline UST system is at an elevation of approximately 534 feet and is surrounded by sandstone mine operations that include sand stockpiles, maintenance and processing buildings and the mine office. Inactive, water-filled, sandstone quarries are present 1,500 feet west, 800 feet northwest and 1,700 feet northeast of the former gasoline USTs. The southeasterly flowing Buck Creek is approximately 450 feet southwest at an elevation of approximately 510 feet and the southward flowing Fox River is approximately 700 feet east at an elevation of approximately 500 feet. Based on surface topography, precipitation that falls in the vicinity of the former gasoline USTs generally flows northwest.

In the Wedron community, sandstone bedrock is generally within 20 feet of grade. However, the former gasoline USTs were located within a former sandstone quarry that was subsequently backfilled with various earthen materials. Based on drilling near the area of the former gasoline USTs, the fill consists of layers of clay, clayey sand, silt and poorly- and well-graded sand to depths of at least 45 feet.

Based on water levels measured in area monitoring and water supply wells, groundwater is estimated to be at an elevation of approximately 500 feet near the former UST system. With a surface elevation of approximately 534 feet at the former UST system, groundwater is approximately 34 feet deep. The apparent groundwater flow direction indicates that the area of the former USTs to the south is not upgradient of the residential properties in Wedron.

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<sup>3</sup> November 12, 2013, *Revised Work Plan to Evaluate Two 4,000-Gallon Gasoline USTs, Wedron Silica Company, 3450 2056<sup>th</sup> Road, Wedron, LaSalle County Illinois.*



## WORK PLAN IMPLEMENTATION AND RESULTS

In December 2013, four Geoprobe<sup>®</sup> borings were drilled to depths of approximately 8 feet along the approximate locations of the former piping runs and under the approximate locations of the former dispensers associated with the two former 4,000-gallon gasoline USTs at the approximate locations shown on Figure 2. Soil samples were field-screened for petroleum with a calibrated MiniRae 3000 photoionization detector (PID). One soil sample from the highest PID screen interval was submitted to Environmental Chemistry Consulting Services, Inc. (ECCS) of Madison, Wisconsin (State of Illinois Accreditation #200062) for analyses of volatile organic compounds (VOCs) in accordance with United States Environmental Protection Agency (USEPA) Method 8260B, lead in accordance with USEPA Method 6010C and soil pH in accordance with USEPA Method 9045C. The analyses for lead and pH were conducted by Pace Analytical Services, Inc. (Pace) of Green Bay, Wisconsin (State of Illinois Accreditation #200050) as a subcontractor to ECCS. The portion of the laboratory analytical reports related to soil samples collected near the 4,000-gallon USTs and field and methanol blanks are provided in Appendix B and the chains-of-custody are provided in Appendix C. The laboratory report for the excavation soil samples collected in 1998 is provided in the first attachment to the November 12, 2013 Work Plan provided in Appendix A.

Based on observations of soil in the 12-foot deep former UST excavation and in the four borings drilled to 8 feet beneath the piping runs and dispensers in December 2013, subsurface soil conditions primarily consist of clayey fill soil. Poorly-graded sand with silt was noted at a depth of approximately 7 feet in one of four borings drilled at the locations of the piping runs and dispensers. Soil boring logs for the borings drilled near the piping runs and dispensers in December 2013 are provided in Appendix D.

Groundwater was not encountered in the UST excavation during the closure of the USTs in 1998. Groundwater was also not encountered in the four borings drilled in December 2013 to depths of 8 feet near the former piping runs and dispensers. Based on measured area groundwater depths, groundwater in the area of the former USTs is approximately 34 feet deep.

The analytical results for the excavation soil samples collected in 1998 and the soil samples collected from soil borings in December 2013 are summarized on Tables 1 and 2. The locations of the excavation soil samples collected in 1998 are shown in the first attachment to the November 12, 2013 Work Plan provided in Appendix A.

Illinois Tiered Approach to Corrective Action Objectives (TACO)<sup>4</sup> Tier 1 Class I migration to groundwater soil remediation objectives (SROs) were exceeded in shallow soil samples for benzene, ethylbenzene, naphthalene, toluene, 1,3,5-trimethylbenzene, and m,p-xylenes. Based on field screening results of soil samples, soil impacts decrease rapidly between the depths of 6 and 8 feet.

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<sup>4</sup> Title 35, Subtitle G, Chapter I, Subchapter F, Part 742 of the Illinois Administrative Code.



## **WATER SUPPLY WELL SURVEY**

Area residences and businesses obtain potable water from private water supplies. In general, homes/businesses obtain potable water from individual water supply wells; however, there are some wells that connect to more than one home/business. GZA requested records of water supply wells from the Illinois State Water Survey and received well construction reports for 29 water supply wells. The local private water supplies are obtained from either the near-surface St. Peter Sandstone aquifer or the deeper New Richmond aquifer.



The closest residential populations to the former UST system are located in the southern portion of the community of Wedron, approximately 425 feet north on the north side of Alice Street. The closest water supply well to the former UST system is the Wedron Silica mine office well located approximately 350 feet northeast of the former USTs. Water samples were collected from the mine office well on six occasions between 1998 and 2013, and analyzed for drinking water VOCs. There were no detections of VOCs in the six samples, including no detections of the petroleum VOCs benzene, toluene, ethylbenzene and xylenes.

Two water table groundwater monitoring wells (MW-2 and MW-3) were installed by Wedron Silica in May 2013, along Alice Street at locations approximately 430 feet to the north and 530 feet to the northeast of the former USTs, respectively. USEPA sampled the two wells in May 2013 for VOCs and petroleum VOCs were not detected in samples from either monitoring well.

In addition to groundwater quality results, the groundwater flow direction between the former USTs and the Wedron community indicates water supply wells in the community are not at risk from petroleum constituents detected in soil beneath the former piping runs and dispensers. The apparent groundwater flow direction indicates that the area of the former USTs to the south is not upgradient of the residential properties in Wedron.

## **STAGE 2 SITE INVESTIGATION WORK PLAN**

The objective of the proposed Stage 2 Site Investigation is to evaluate the horizontal and vertical extent of VOCs in soil near the former gasoline UST system. In order to achieve the objective, GZA proposes the following scope of work:

- Five Geoprobe<sup>®</sup> soil borings will be drilled to depths up to 15 feet at the approximate locations shown on Figure 2.
- The first boring, GP-01-2014, will be drilled near the location of GP-04 where PID results were highest in the 6- to 8-foot sample of the four borings drilled in December 2013.
- The current gasoline aboveground storage tank (AST) may need to be temporarily moved to allow this target location to be drilled.



- The next four borings (GP-02-2014 through GP-05-2014) will be drilled approximately 10 feet to the north, east, south and west of the area of the four borings drilled in 2013, respectively, at the approximate locations shown on Figure 2.
- Soil samples will be field-screened for petroleum with a PID capable of measuring in the ppb range, and three soil samples from each boring will be submitted for laboratory analyses for VOCs<sup>5</sup> in accordance with USEPA Method 8260B.
- Soil samples will be selected for laboratory analyses based on field indications from field screening, odors, staining, etc. If there are no such indicators, a soil sample from the middle of the 0- to 5-foot and 5- to 10-foot intervals and the base of the deepest sampling interval will be submitted for the laboratory analyses.
- If soil VOC concentrations are all less than TACO Tier 1 Class I migration to groundwater SROs in the outermost set of borings and the deepest soil sampling intervals, additional investigation will be unnecessary and a corrective action plan will be prepared, if warranted.
- If TACO Tier 1 Class I migration to groundwater SROs are exceeded in soil samples from the deepest sampled intervals or the furthest stepped-out soil borings, additional soil investigation will be conducted by drilling additional soil borings stepped out an additional 10 to 20 feet from the borings exhibiting the exceedances and/or extending soil borings an additional 5 to 10 feet deeper. If, during drilling, field observations indicate the likelihood that additional borings are required to evaluate the horizontal and/or vertical extent of TACO Tier 1 Class I migration to groundwater SROs, additional stepped-out borings may be drilled during the same field mobilization. This iterative investigative process will be continued until the vertical and horizontal extents of exceedances in soil are determined.
- After the horizontal and vertical extents of TACO Tier 1 Class I migration to groundwater SROs are determined, a Site Investigation Completion Report and Corrective Action Plan, if warranted, will be prepared and submitted to the IEPA and the USEPA.

The various elements of this Stage 2 Investigation will be conducted in accordance with the Quality Assurance Project Plan, Data Quality Objectives, and Health and Safety Plan previously established for conducting the November 12, 2013 Work Plan.

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<sup>5</sup> Analyses for lead and pH are not proposed, as lead was not detected in the 2013 soil samples at concentrations exceeding TACO Tier 1 Class I migration to groundwater SROs.

## LICENSED PROFESSIONAL GEOLOGIST CERTIFICATION

I certify under penalty of law that all activities that are the subject of this plan, budget, or report were conducted under my supervision or were conducted under the supervision of another Licensed Professional Engineer or Licensed Professional Geologist and reviewed by me; that this plan, budget, or report and all attachments were prepared under my supervision; that, to the best of my knowledge and belief, the work described in this plan, budget, or report has been completed in accordance with the Environmental Protection Act [415 ILCS 5], 35 Ill. Adm. Code 731, 732, or 734, and generally accepted standards and practices of my profession; and that the information presented is accurate and complete. I am aware there are significant penalties for submitting false statements or representations to the Illinois EPA, including but not limited to fines, imprisonment, or both as provided in Sections 44 and 57.17 of the Environmental Protection Act [415 ILCS 5/44 and 57.17].

Very truly yours,

**GZA GeoEnvironmental, Inc.**



Bernard G. Fenelon  
Senior Project Manager



Mark J. Krumenacher, P.G.  
Principal

L.P.G. Seal



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stage 2 si plan\final 151178.51 stage 2 si plan\_wedron.docx

c: Mr. Steve Faryan, US Environmental Protection Agency  
Mr. Mike Melton, Wedron Silica Company  
Mr. David Olchawa, Wedron Silica Company  
Mr. William Bath, Lockheed Martin

Attachments



## **TABLES**



TABLE 1  
VOLATILE ORGANIC COMPOUND SOIL SAMPLE ANALYTICAL RESULTS  
Wedron, Illinois

Analyte	CAS Registry No.	TACO Tier I Soil Component of Groundwater Ingestion Remediation Objectives	UST Excavation Samples					Piping Run and Dispenser Soil Boring Samples					QA/QC Samples	
			SS2-01 (Excavation Base)	SS2-02 (West Wall)	SS2-03 (South Wall)	SS2-04 (North Wall)	SS2-05 (East Wall)	WS-SB-GP-3 (4'-6')	WS-SB-GP-4 (4'-6')	WS-SB-GP-5 (2'-4')	WS-SB-GP-6 (0'-2')	WS-SB-GP-6 (Duplicate 1) (0'-2')	Equipment Blank	MeOH Blank
			10-Nov-98	10-Nov-98	10-Nov-98	10-Nov-98	10-Nov-98	3-Dec-13	3-Dec-13	3-Dec-13	3-Dec-13	3-Dec-13	3-Dec-13	3-Dec-13
VOCs (8260B)		µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	µg/kg	mg/l	µg/l
Acetone	67-64-1	25	-	-	-	-	-	<0.990 J	<1.1 J	<1 J	<20	<19 J	0.0058 J	<1 J
Benzene	71-43-2	0.030	<0.002	<0.002	<0.002	0.003	<0.002	3.4	3.8 J	8.2	18	13	<0.0005	<0.025 J
n-Butyl Benzene	104-51-8	52	-	-	-	-	-	0.56 J,HC	4.5	8.5	<0.5	15	<0.0005	<0.025 J
sec-Butyl Benzene	135-98-8	NE	-	-	-	-	-	0.06 J	0.056 J	0.095 J	<0.5	2.7	<0.0005	<0.025 J
tert-Butylbenzene	98-06-6	NE	-	-	-	-	-	1.5 J	8.6	4.7 E	<0.5	23	<0.0005	<0.025 J
Carbon disulfide	75-15-0	32	-	-	-	-	-	<0.025	<0.027 J	<0.025	<0.5	<0.48	0.00011 J	<0.025 J
Chloroform	67-66-3	0.60	-	-	-	-	-	<0.025	<0.027 J	<0.025	<0.5	<0.48	0.00042 J	<0.025 J
Dichlorodifluoromethane	75-71-8	43	-	-	-	-	-	<0.025	0.0065 J,B	0.006 J,B	<0.5	<0.48	<0.0005 J	<0.025
Ethylbenzene	100-41-4	13	<0.002	<0.002	<0.002	<0.002	<0.002	6.5 HC	22 HC	28 J,HC	80 HC	61 HC	<0.0005	<0.025 J
n-Hexane	110-54-3	82	-	-	-	-	-	0.88 J	3.3 J	10 J	47 J	31 J	<0.0005	<0.025 J
Isopropylbenzene	98-82-8	91	-	-	-	-	-	0.31	0.86 J	2.2	6.7	5.4	<0.0005	<0.025 J
p-Isopropyltoluene	99-87-6	NE	-	-	-	-	-	0.027 J	0.96 J	2 J	1.2	<0.48	<0.002	<0.025
Methyl t-Butyl Ether	1634-04-4	NE	-	-	-	-	-	<0.025 J	<0.027 J	<0.025 J	<0.5 J	<0.48 J	<0.0005 J	<0.025 J
Naphthalene	91-20-3	12	-	-	-	-	-	2.8 J	18 J	18 J	36 J	36 J	<0.005 J	<0.25 J
n-Propylbenzene	103-65-1	56	-	-	-	-	-	1.3 J	7.3	11	32	25	<0.0005 J	<0.025 J
Styrene	100-42-5	4	-	-	-	-	-	<0.025	<0.027 J	<0.025	<0.5	<0.48	<0.0005	<0.025
Toluene	108-88-3	12	<0.002	<0.002	<0.002	<0.002	<0.002	17	43 J,HC	54 J,HC	220 J,HC	210 J,HC	0.00008 J	<0.025 J
1,3,5-Trimethylbenzene	108-67-8	2	-	-	-	-	-	2.7 J	18	24	60	47	<0.0005	<0.025 J
1,2,4-Trimethylbenzene	95-63-6	NE	-	-	-	-	-	9.8 J	61 J,HC	81 J,HC	210 J,HC	170 J,HC	<0.0005	<0.025 J
m,p-Xylene	108-38-3, 106-42-3	210	<0.005	<0.005	<0.005	<0.005	<0.005	28	110 J,HC	120 J,HC	320 J,HC	240	<0.001	<0.050 J
o-Xylene	95-47-6	190						11	41 J,HC	45 J,HC	120	88	0.001 J	<0.025 J

Notes:

1. Samples samples from 1998 were collected from the UST excavation base and sidewall by Terra Environmental Services, Inc. of LaSalle, IL and were submitted to Prairie Analytical Systems, Incorporated of Springfield, IL for benzene, toluene, ethylbenzene and xylene analyses in accordance with USEPA Method 8260B. Soil samples from 2013 were collected by GZA GeoEnvironmental, Inc. (GZA) of Waukesha, WI from soil borings and were submitted to Environmental Chemistry Consulting Services, Inc. (ECCS) of Madison, Wisconsin for VOC analyses in accordance with USEPA Method 8260B.
2. Analytical results are compared to Illinois Tiered Approach to Corrective Action Objectives (TACO) Tier I Soil Component of Groundwater Ingestion Remediation Objectives.
3. Concentrations are provided in micrograms per kilogram (µg/kg) or micrograms per liter (µg/l), as shown.
4. "NE" = Standard is not established for the parameter. "-" = Sample not tested for the parameter.
5. "<" = less than the specified concentration.
6. "J" = Indicates an estimated value.
7. "HC" = Results may be biased high because of high continuing calibration verification (CCV).
8. "E" = Results exceeded the instrument calibration range.
9. "B" = Constituent was detected in a laboratory blank.
10. Bold results indicate a detection and yellow shaded cells indicate an exceedance of the TACO Tier I Soil Component of Groundwater Ingestion Remediation Objective.



**TABLE 2**  
**LEAD AND pH SOIL ANALYTICAL RESULTS**  
**Wedron, Illinois**

Analyte and USEPA Method	CAS Registry No.	TACO Tier I Soil Component of Groundwater Ingestion Remediation Objectives pH = 4.5 to 6.24	TACO Tier I Soil Component of Groundwater Ingestion Remediation Objectives pH = 6.25 to 8.74	TACO Tier I Soil Component of Groundwater Ingestion Remediation Objectives pH = 8.75 to 9.0	WS-SB-GP-3 (4'-6')	WS-SB-GP-4 (4'-6')	WS-SB-GP-5 (2'-4')	WS-SB-GP-6 (0'-2')	WS-SB-GP-6 (Duplicate 1) (0'-2')
Lead (6010C)		mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Lead	7439-92-1	23	107	282	6.0	9.0	6.8	8.9	7.3
pH	NA	NA	NA	NA	8.3 H6	8.4 H6,lq	8.4 H6	9.4 H6	8.3 H6

**Notes:**

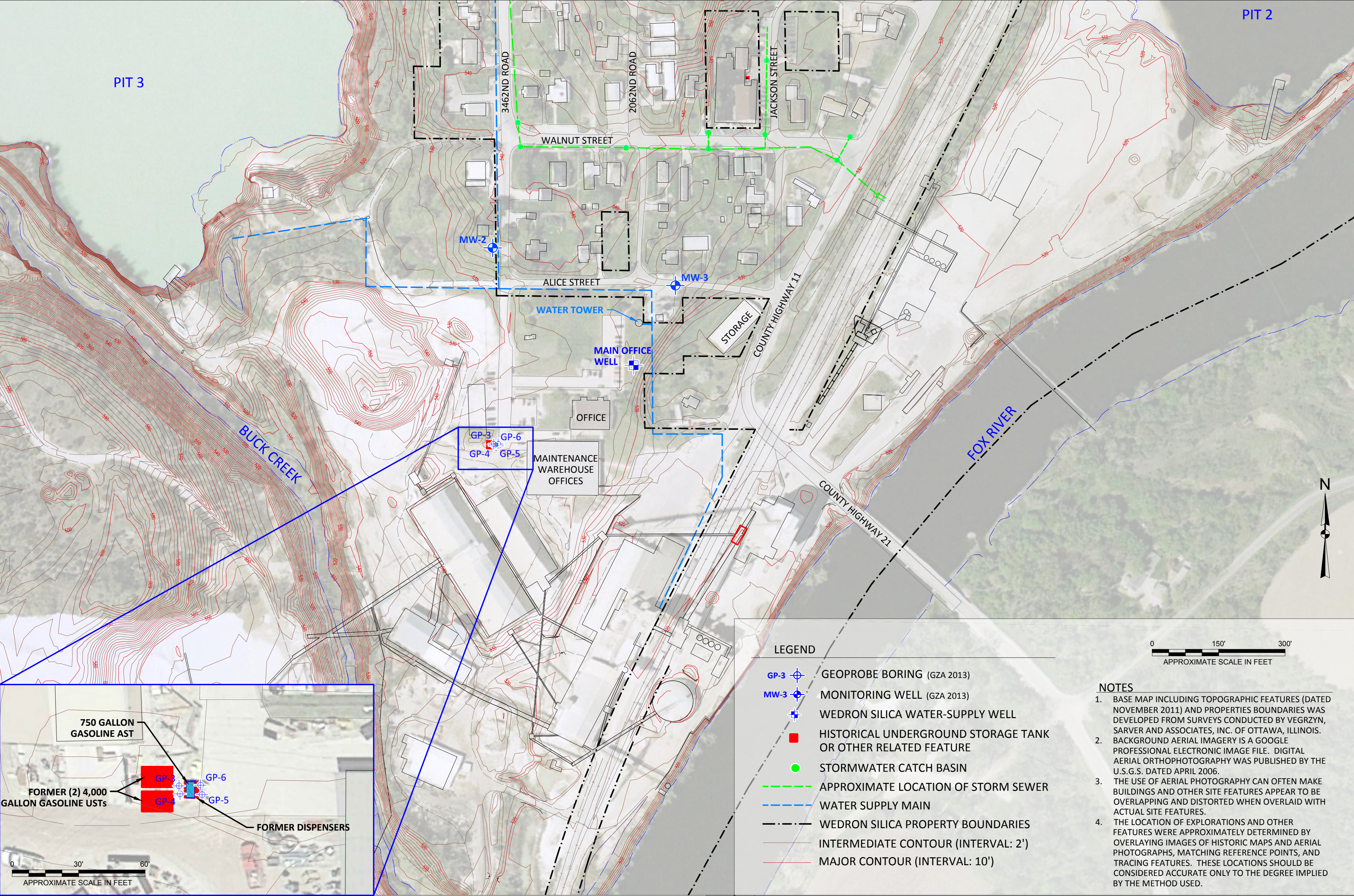
1. Samples were collected by GZA GeoEnvironmental, Inc. (GZA) of Waukesha, WI on December 3, 2013, and were submitted to Environmental Chemistry Consulting Services, Inc. (ECCS) of Madison, Wisconsin for analysis.
2. Analytical results are compared to Illinois Tiered Approach to Corrective Action Objectives (TACO) Tier I Soil Component of Groundwater Ingestion Remediation Objectives.
3. Concentrations are provided in milligrams per kilogram (mg/kg), as shown.
4. "NT" = sample not tested for that parameter.
5. "H6" = Analysis initiated outside of the 15-minute United States Environmental Protection Agency (USEPA) holding time.
6. "lq" = Due to sample matrix, DI water was added to sample in a 1:1 ratio and sample was stirred prior to analysis.





## **FIGURES**





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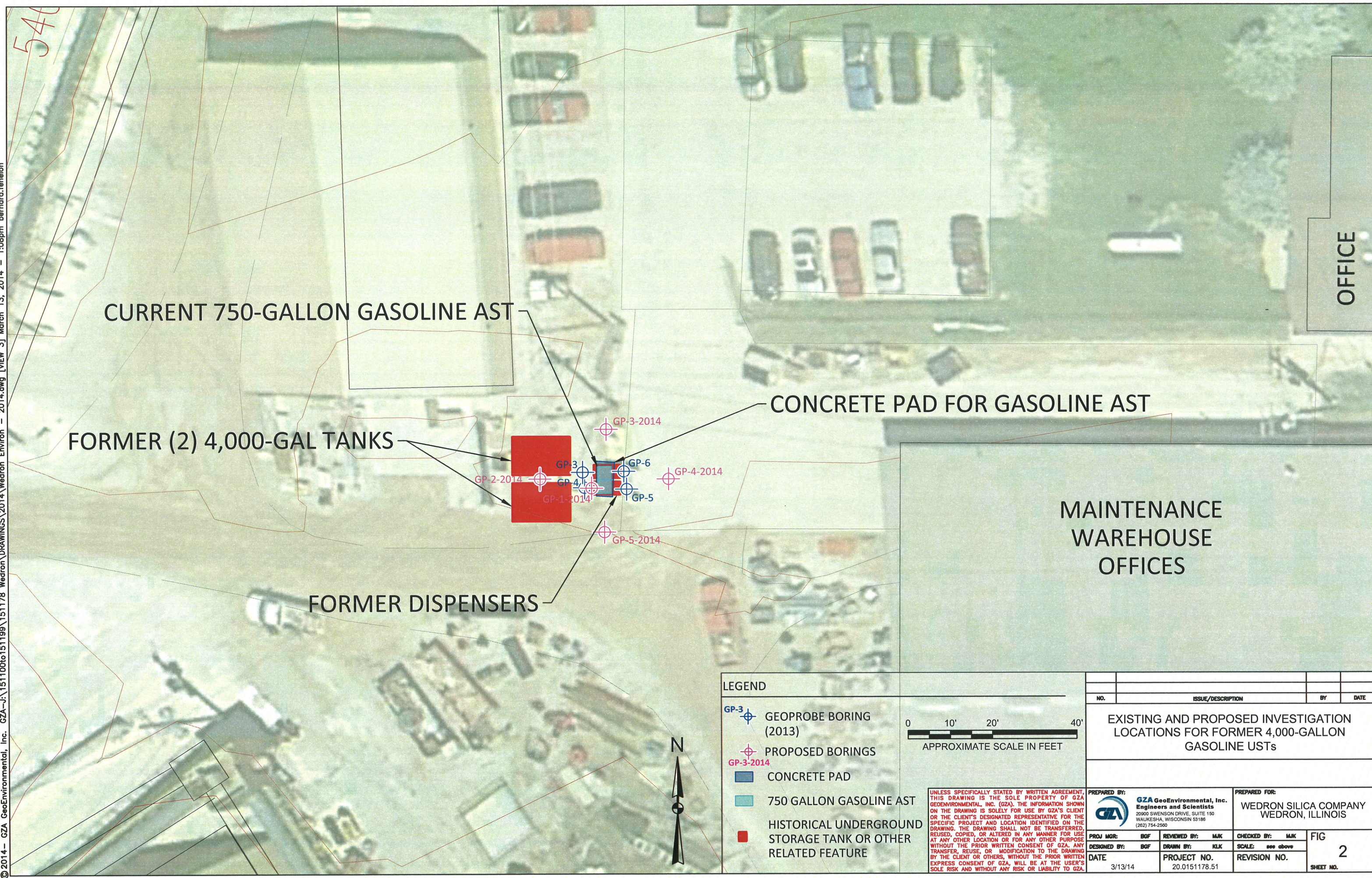
**WEDRON SILICA COMPANY  
WEDRON, ILLINOIS**

**SITE AND AREA MAP WITH SOIL BORING  
LOCATIONS AND APPROXIMATE LOCATIONS  
OF FORMER 4,000 GALLON GASOLINE USTs**

NO.	ISSUE/DESCRIPTION			BY	DATE
				FIGURE	
	PROJ MGR:	BGF	DATE	1	
	DESIGNED BY:	BGF	3/12/14		
	REVIEWED BY:	MJK	PROJECT NO.		
	DRAWN BY:	KLK	20.0151178.51		
	CHECKED BY:	MJK	REVISION NO.		
	SCALE:	see above			SHEET NO.

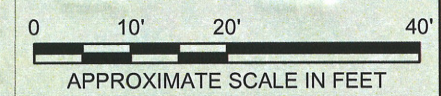


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LEGEND

- GP-3-2014 GEOPROBE BORING (2013)
- GP-3-2014 PROPOSED BORINGS
- CONCRETE PAD
- 750 GALLON GASOLINE AST
- HISTORICAL UNDERGROUND STORAGE TANK OR OTHER RELATED FEATURE



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NO.		ISSUE/DESCRIPTION	BY	DATE
EXISTING AND PROPOSED INVESTIGATION LOCATIONS FOR FORMER 4,000-GALLON GASOLINE USTs				
PREPARED BY:		GZA GeoEnvironmental, Inc. Engineers and Scientists 20900 SWENSON DRIVE, SUITE 150 WALKER, WISCONSIN 53189 (262) 754-2500		PREPARED FOR: WEDRON SILICA COMPANY WEDRON, ILLINOIS
PROJ MGR:	BGF	REVIEWED BY:	MJK	CHECKED BY: MJK
DESIGNED BY:	BGF	DRAWN BY:	KLK	SCALE: see above
DATE	3/13/14	PROJECT NO.	20.0151178.51	REVISION NO.
FIG 2				SHEET NO.





## **APPENDIX A**

**Revised November 12, 2013 Work Plan to Evaluate  
Two 4,000-Gallon Gasoline USTs**

November 12, 2013  
File No. 20.0151178.51

Illinois Office of State Fire Marshal  
Division of Petroleum & Chemical Safety  
1035 Stevenson Drive  
Springfield, Illinois 62703



Attention: Mr. Fred M. Schneller  
Division Manager

Subject: Revised Work Plan to Evaluate Two 4,000-Gallon Gasoline USTs  
Wedron Silica Company  
3450 2056<sup>th</sup> Road  
Wedron, LaSalle County, Illinois  
Facility No. 1-017611

20900 Swenson Drive,  
Suite 150  
Waukesha, Wisconsin  
53186

262-754-2560  
Fax: 262-754-9711

[www.gza.com](http://www.gza.com)

Dear Mr. Schneller:

On behalf of Wedron Silica Company (Wedron Silica), GZA GeoEnvironmental, Inc. (GZA) is providing this revised response ("Revised Response") to the Illinois Office of State Fire Marshal's (OSFM) July 2, 2013 letter requiring the completion of a site assessment at the Wedron Silica property at 3450 East 2056<sup>th</sup> Road in Wedron, LaSalle County, Illinois ("Site"). This Revised Response, which replaces the initial August 22, 2013 response letter previously provided to the OSFM, takes into account United States Environmental Protection Agency (USEPA) comments to the initial proposed scope of work provided in the August 22, 2013 letter.

In this Revised Response, GZA provides documentation of past Site assessment activities for a diesel fuel underground storage tank (UST) system and a gasoline UST system and a scope of work for completing the Site assessment of the gasoline UST system. A Site assessment was conducted for each of the UST systems at the time of closure in 1998, and was documented by Terra Environmental Services, Inc. (Terra) of LaSalle, Illinois in a January 1999 report.<sup>1</sup> The UST closure assessment report is provided as Attachment 1.

## **DIESEL FUEL UST SYSTEM**

The diesel fuel UST was closed by removal from the Site in November 1998. Terra documented the collection of five closure soil samples; four from the sidewall of the UST excavation and one from the bottom of the UST excavation. The 1999 closure assessment and a 1994 diagram of the 20,000-gallon diesel UST system obtained from Illinois Division of Petroleum and Chemical Safety files, and provided as Attachment 2, document the piping runs and dispensers over the UST. Because the piping runs and

---

<sup>1</sup> January 1999, Terra Environmental Services, Inc., *Closure of Underground Storage Tanks, Wedron Silica Company, Wedron, Illinois*.



dispensers were located above the UST and within the footprint of the UST excavation, soil sampling from beneath piping runs and dispensers was conducted through the collection of UST excavation soil samples and additional separate soil sampling was unnecessary. The closure soil samples were submitted for laboratory analyses for diesel fuel indicator parameters consisting of benzene, toluene, ethylbenzene, total xylenes (BTEX) and polycyclic aromatic hydrocarbons (PAHs). In four of the five Site assessment soil samples collected from the diesel fuel UST excavation, indicator parameters were not detected. In one sidewall sample, concentrations of ethylbenzene, toluene, xylenes and one PAH constituent (pyrene) were detected. Each of the detected concentrations was at least two orders of magnitude less than the most stringent industrial/commercial soil cleanup objectives.

### **FORMER AND CURRENT GASOLINE UST SYSTEMS**

The gasoline fuel UST was closed by removal from the Site in November 1998. The gasoline UST system consisted of two 4,000-gallon gasoline USTs, a short length of piping run and two side-by-side fuel dispensers. Terra documented the collection of five closure soil samples; four from the sidewall of the UST excavation and one from the bottom of the UST excavation. The Site assessment soil samples were submitted for laboratory analyses for gasoline indicator parameters consisting of BTEX. In four of the five closure soil samples collected from the gasoline UST excavation, the indicator parameters were not detected. In one sidewall sample, benzene was detected at a concentration one order of magnitude less than the most stringent industrial/commercial soil cleanup objective.

The 1999 closure assessment documented that, “The dispensers and fill pipes were east of the tanks.” In the first photograph provided in the 1999 closure assessment report, two dispensers are shown housed in a three-sided shed immediately off the west edge of the roadway and a power pole is shown a short distance to the north. In the last photograph provided in the 1999 closure assessment report, the UST excavation is shown immediately behind (west of) the shed and two small-diameter pipes are evident in the east wall of the excavation within about 2 feet of grade and extending toward the shed. On Figure 3 of the 1999 closure assessment, a “New Tank” is shown in the same shed immediately east of the UST excavation.

Three undated, oblique aerial photographs showing the location of dispenser pumps in relation to the power pole are shown in Attachment 3. In the first two photographs, the dispensers are shown as standing uncovered just west of the edge of the pavement and south of the power pole, and in the third photograph, the dispensers are shown covered by a three-sided shed, as it existed at the time the gasoline UST system was closed. The first two photographs also show a truck parked with the rear end of the vehicle in front of the dispensers and the front of the truck just south of the power pole. The vehicle appears to be similar to a Jeep Cherokee or Chevrolet Blazer, both of which are approximately 13.5 feet long. Therefore, the center of the dispensers appears to have been approximately 15 to 17 feet south of the power pole and immediately west of the edge of the concrete pavement.



The current configuration of the 750-gallon gasoline aboveground storage tank (AST) that was installed in the shed to replace the two 4,000-gallon gasoline USTs is shown in relation to the power pole and the closed gasoline UST system on the attached Figure 1. Photographs of the current 750-gallon gasoline AST are provided in Attachment 4. The 750-gallon gasoline AST is no longer housed in the shed. Based on the information provided in the 1999 closure assessment report and that observed in the aerial photographs, the current 750-gallon AST is at the same location as the former dispensers associated with the 4,000-gallon gasoline USTs.

### **MEETING WITH ILLINOIS OSFM**

On August 8, 2013, representatives of the Illinois OSFM met with representatives of Wedron Silica to discuss the activities required to complete the Site assessments. During that meeting, Wedron Silica provided the 1999 closure assessment and a 1994 20,000-gallon diesel UST diagram obtained from Illinois Division of Petroleum and Chemical Safety files that documented the location of piping runs and the dispenser over the UST. Representatives of the Illinois OSFM agreed that the Site assessment conducted for the diesel fuel UST was adequate and that no further sampling was required.

Wedron Silica also presented information from aerial photographs and the photographs provided in the 1999 closure assessment for the former gasoline UST system. Based on this information, OSFM representatives agreed that drilling two borings, one near the apparent location of the piping runs between the former UST excavation and the dispenser pumps and one beneath the apparent location of the dispenser pumps, and collecting soil samples for field screening and laboratory analyses were sufficient to complete the Site assessment of the gasoline UST system. Based on subsequent modifications to the scope of work requested by the USEPA, the number of borings to be drilled near the apparent locations of the piping runs and the former dispenser pumps was increased and the analytical suite was changed. Therefore, the following revised scope of work will be conducted:

- Four Geoprobe<sup>®</sup> soil borings will be drilled to depths of approximately 7 feet (2 feet below the top of the former USTs) at the approximate locations shown on Figure 1. The proposed borings target the location of the former dispensers and the approximate locations of the former piping runs between the former USTs and dispensers.
- The current gasoline AST will be temporarily moved to allow the target locations to be drilled.
- Soil samples will be field-screened for petroleum with a photoionization detector (PID) capable of measuring in the ppb range, and one soil sample from each boring will be submitted for laboratory analyses for volatile organic compounds (VOCs) in accordance with USEPA Method 8260B, lead in



accordance with USEPA Method 6010C, and soil pH in accordance with USEPA Method 9045C. Soil samples will be selected for laboratory analyses based on field indications from field screening, odors, staining, etc. If there are no such indicators, a soil sample from the 5- to 7-foot interval will be submitted for the analyses.



- The work conducted, the field screening and analytical results obtained, a comparison of detected constituent concentrations to Illinois Tiered Approach to Corrective Action Objectives (TACO)<sup>2</sup> Tier 1 Class I migration to groundwater soil remediation objectives (SROs) and recommendations for follow-up investigation activities, as warranted, will be documented in a report. The report will be submitted to the OSFM and the USEPA. If soil VOC concentrations are all less than TACO Tier 1 Class I migration to groundwater SROs, additional investigation will be unnecessary. If TACO Tier 1 Class I migration to groundwater SROs are exceeded, additional activities such as development of Tier 2 TACO levels and/or additional soil investigation and possible investigation of groundwater will be considered. If additional investigation of soil and/or groundwater is warranted, a Workplan will be prepared and submitted to the OSFM in advance of conducting additional investigation.

Please contact David Olchawa, Central Region Environmental Manager, at (815) 431-8692 if you have any questions or wish to discuss this response to your request.

Very truly yours,

**GZA GeoEnvironmental, Inc.**

A handwritten signature in blue ink, appearing to read "B. Fenelon", written over a horizontal line.

Bernard G. Fenelon, P.G.  
Senior Project Manager

A handwritten signature in blue ink, appearing to read "Mark J. Krumenacher", written over a horizontal line.

Mark J. Krumenacher, P.G.  
Principal

J:\151100to151199\151178 Wedron\50 Community Groundwater\AST-UST Closure\Correspondence\  
Revised FINAL 151178 50 Wedron 4,000-Gal UST Evaluation SOW 11-12-13.docx

#### Attachments

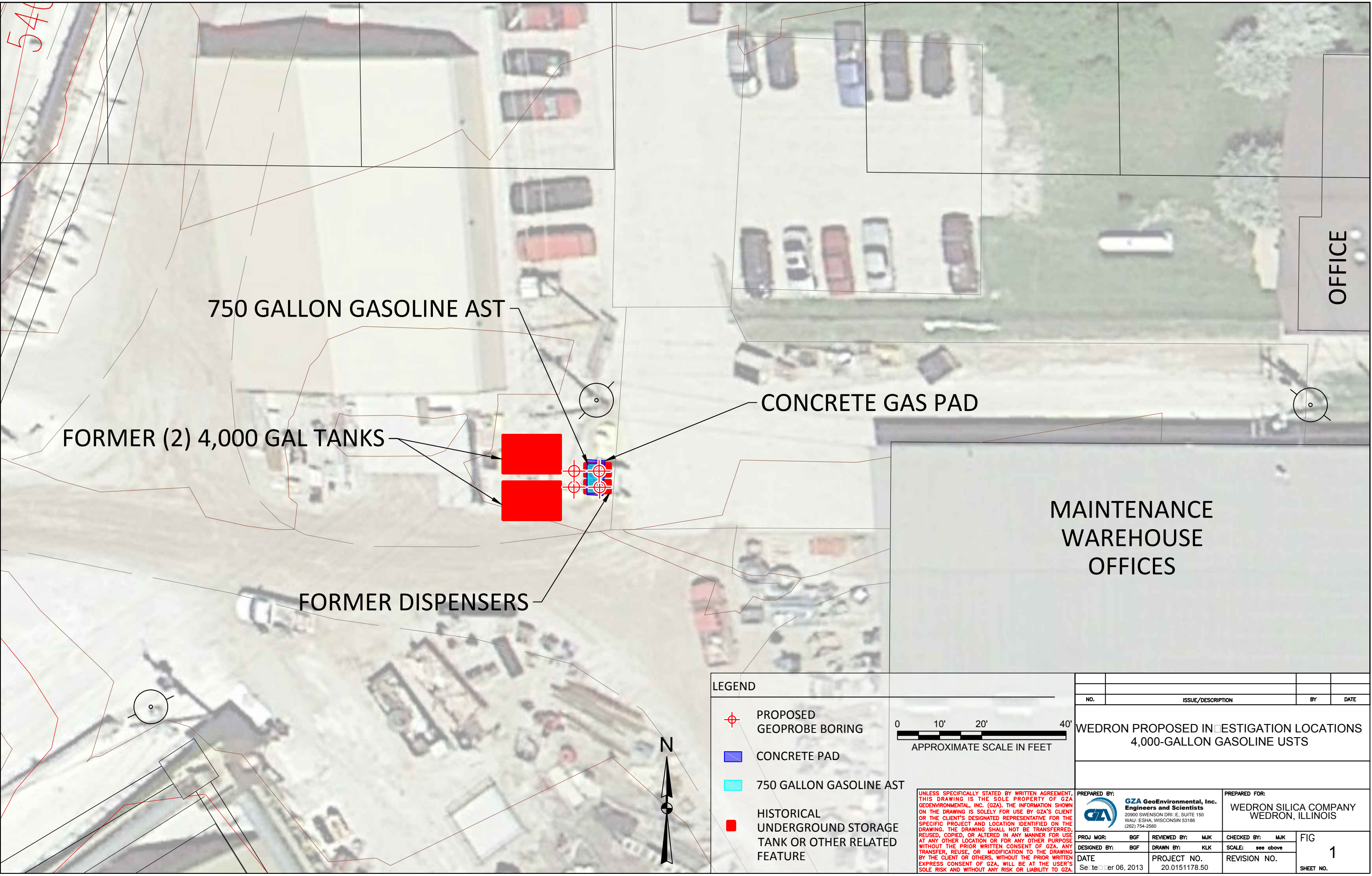
c: Mr. Mike Melton, Wedron Silica Company  
Mr. David Olchawa, Wedron Silica Company

<sup>2</sup> Title 35, Subtitle G, Chapter I, Subchapter F, Part 742 of the Illinois Administrative Code.



**FIGURE**

© 2013— GZA GeoEnvironmental, Inc. GZA-J:\151100to151199\151178 Wedron\DRAWINGS\2013\Wedron Environ - 9-06.dwg [VIEW 3] September 24, 2013 - 2:53pm bernard.fenelon





## **ATTACHMENT 1**

### **January 1999 Underground Storage Tank Closure Report**

**CLOSURE OF UNDERGROUND  
STORAGE TANKS**

**Wedron Silica Company  
Wedron, Illinois**

**Prepared by**

**Terra Environmental Services, Inc.  
406 First Street  
LaSalle, Illinois**

**January 1999**



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- B Special Waste Manifests
- C Certificate of Destruction
- D Laboratory Report
- E Photographs of Tank Removal Activities
- F Logs of OSFM Underground Storage Tank Removal



## **1.0 Introduction**

In November 1998, Wedron Silica hired Pipeco, Inc. of Bettendorf, Iowa to remove and replace three underground storage tanks (USTs) located at their facility in Dayton Township, LaSalle County, Illinois. The work was conducted to comply with the federal UST upgrade requirements (40 CFR 280.21). The tanks, which were removed by subcontractor Fatlan Trucking, Inc. of Gardner, Illinois, consisted of one 20,000 gallon diesel UST and two 4,000 gallon gasoline USTs. Their locations at the site are shown on Figure 1. Tank registrations and permits from the Office of the State Fire Marshal (OSFM) to remove the tanks are in Appendix A.

Terra Environmental Services, Inc. was retained to oversee and document the tank removals and to conduct confirmation sampling. This report summarizes the tank closures and presents supporting documentation.

## 2.0 Closure Activities

### *Diesel Tank*

The diesel UST was located approximately 60 feet northeast of the Heavy Equipment Maintenance Shop (Tractor Shed). The dispenser pump was supported on two thick concrete pads located above the south end of the tank. The fill pipe was also located at the south end of the tank. On November 9, all remaining product in the tank was transferred to the newly-installed diesel tank, and the top of the tank, approximately four feet below grade, was uncovered. On November 9 and 10, RS Used Oil Services of Monee, Illinois, under subcontract to Fatlan Trucking, pumped sludge from the tank to a tanker truck and transported it as special waste to the City of Cresthill on November 9, and to ESI in Indianapolis, Indiana on November 11 for recycling. The manifests are included in Appendix B.

The tank was purged of explosive vapors by the introduction of compressed air. Then, soil around the tank was excavated using a trackhoe, in the presence of Mr. Ken Oltman, the OSFM representative. Oil staining was observed on the concrete dispenser supports, and a slight diesel odor was noted in the soil at the south end of the tank. After excavation of soil on all sides of the tank, it was lifted from the pit using a 50-ton crane by E. J. Cattani & Son, Inc. of Ladd, Illinois, under subcontract to Fatlan Trucking. Holes were then cut in each end of the tank, and the inside was cleaned manually by scraping and absorbing liquids with "Oil Dry." The material was transferred to a drum, which was then shipped by RS Used Oil Services to SER in Mishawaka, Indiana for disposal. Manifests are included in Appendix B.

The tank was steel, measuring 30 feet by ten feet in diameter. It appeared to be in relatively good condition, having only a small amount of rust on the south end. It was shipped to Whittaker Salvage, Inc. in Earlville, Illinois to be cut up for scrap. The Certificate of Destruction is contained in Appendix C.

The dimensions of the excavation were approximately 20 feet by 40 feet by 13 feet deep in the center. Exposed soils in the pit walls consisted of brown, gravely, silty sand in the upper two feet, underlain by light brown and white, fine sand. There was no standing water or seepage in the pit. Five confirmation samples were collected on the walls and floor of the pit, at locations shown in Figure 2. Wall samples were taken from depths of 10 to 11 feet below grade. For safety reasons, all samples were taken from the trackhoe bucket. On November 11, the pit was backfilled with the excavated soil plus soil that had been excavated for installation of the new diesel tank.

### *Gasoline Tanks*

The gasoline USTs, which were located west of the Wedron Silica office, were also removed on November 10. The dispensers and fill pipes were east of the tanks. The procedures for excavating, cleaning, and disposal of the gasoline tanks and their contents were the same as those for the diesel tank, except that the trackhoe was used to lift the gasoline tanks from the pit. The manifests and Certificates of Destruction for the tanks and contents are contained in Appendix B and C, respectively. Each tank was steel, measuring 14 feet long by seven feet in diameter, and were buried about five feet below grade. The tanks were corroded; however, no fuel staining was seen on the outsides of the tanks, and no staining or gasoline odor was observed in the soils of the tank pit.

The excavation was approximately 19 feet by 20 feet by 12 feet deep. No seepage was observed in the excavation. The bedding backfill around the tanks consisted of sand. Soil outside of the original tank pit was gray, silty clay with scattered grains of sand and gravel. This soil is glacial till; however, it is not in its natural position. This area was quarried many years earlier, and the till was placed as fill in the old quarry.

Confirmation samples were collected from the walls and floor of the excavation at locations shown in Figure 3. Wall samples, which were collected from the trackhoe



bucket, were taken from depths of nine to ten feet. Samples from both UST sites were packed in coolers and preserved with ice for shipment to Prairie Analytical Systems, Inc. in Springfield, Illinois for analysis for the indicator parameters specified for gasoline/diesel by Illinois Administrative Code 732.310. The laboratory report is contained in Appendix D. The gasoline tank pit was backfilled with the excavated soil and was topped off with sand scraped from the adjacent yard. Photographs of activities during the tank removal are presented in Appendix E.

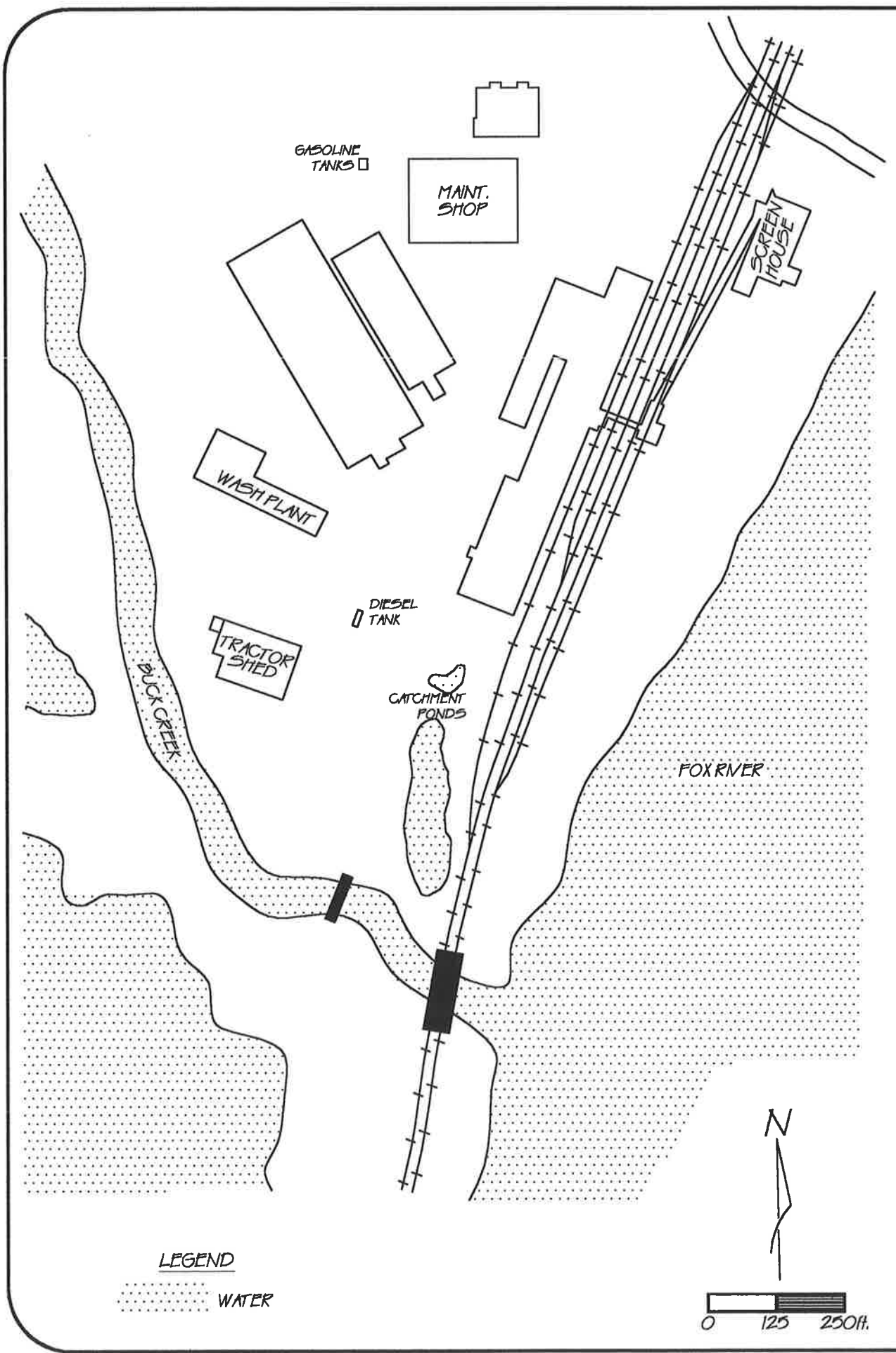
### **3.0 Findings and Conclusions**

As indicated by the OSFM logs of the tank closures (Appendix F), the Fire Marshal's representative found no significant release at either of the UST sites. This is supported by the results of the confirmation sampling. At the gasoline UST site, no detectable levels of the indicator parameters were reported, and at the diesel UST site low concentrations of some indicator parameters were detected in one sample (SS-1-01) from the east wall. All reported levels were below the most conservative cleanup objectives, as shown in the summary of detected constituents, presented in Table I.

From observations and measurements made during the tank closures, it appears that there was no release at the gasoline USTs, and that the traces of contaminants found at the diesel UST may be most likely the result of spillage at the dispenser or the fill pipe.

## Figures

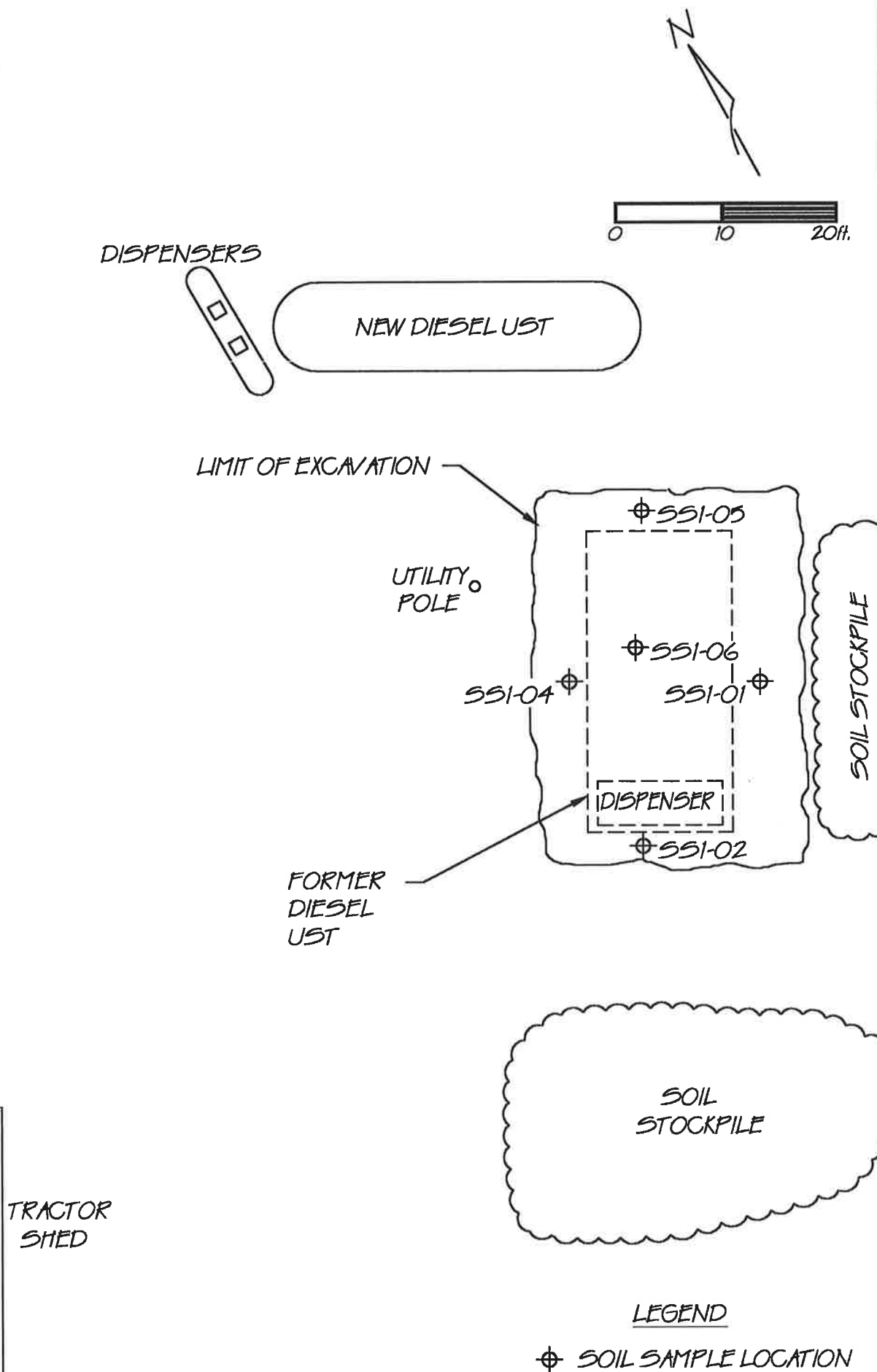




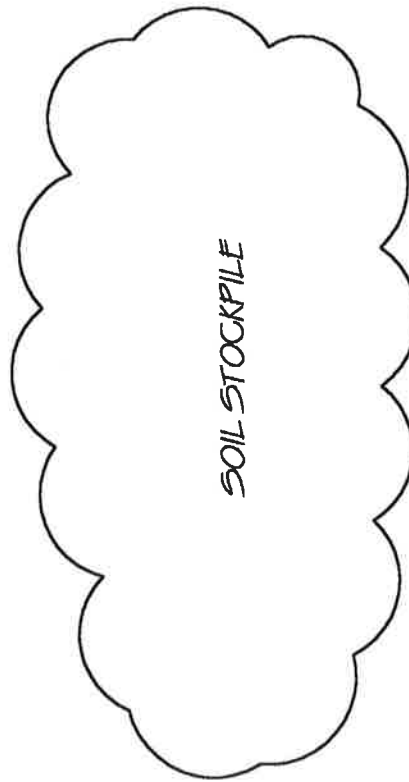
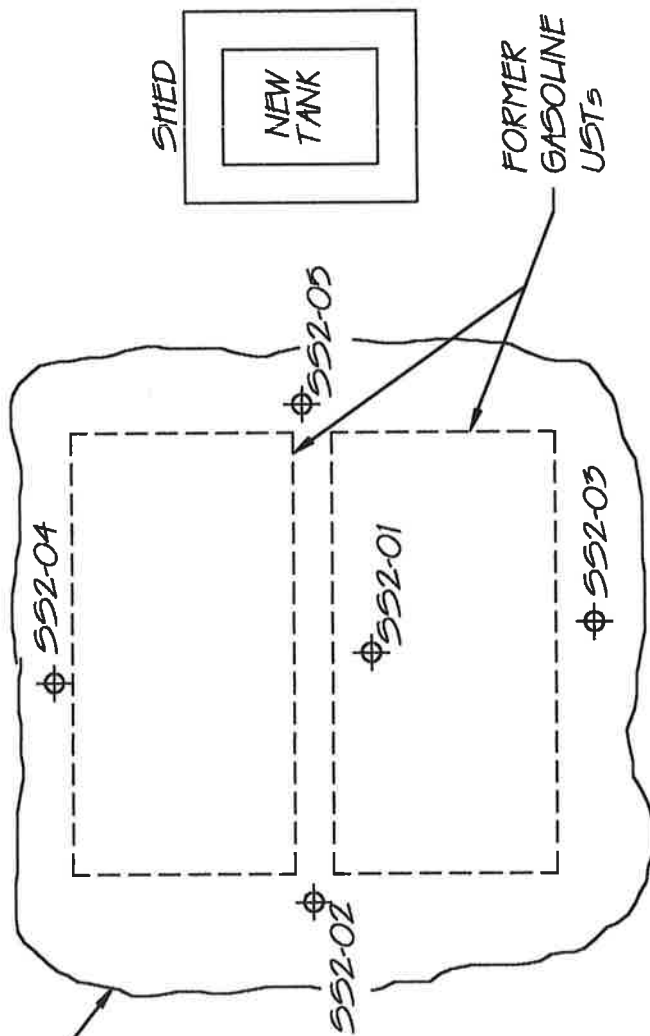
WEDRON SILICA COMPANY  
WEDRON, ILLINOIS

FIGURE 1  
LOCATIONS OF CLOSED  
UNDERGROUND STORAGE TANKS

FIGURE 2  
SAMPLING LOCATIONS AT  
DIESEL TANK PIT



LIMIT OF EXCAVATION



N



LEGEND

⊕ SOIL SAMPLE LOCATION

FIGURE 3  
SAMPLING LOCATIONS AT  
GASOLINE TANK PIT



**Table I**

**Summary of Constituents Detected in Confirmation Sampling**

Table I

Summary of Constituents Detected in Confirmation Sampling

Wedron Silica Company  
Wedron, Illinois

Detected Constituents (SS-1-01 at Diesel UST)		Soil Cleanup Objectives (mg/kg)							
		Residential				Industrial/Commercial			
		Migration to Groundwater				Migration to Groundwater			
Constituent	Concentration (mg/kg)	Ingestion	Inhalation	Class I	Class II	Ingestion	Inhalation	Class I	Class II
Ethylbenzene	0.038	7,800	260	5	7	200,000	260	5	7
Toluene	0.002	16,000	520	5	12.5	410,000	520	5	12.5
Xylenes	0.334	160,000	320	74	74	1,000,000	320	74	74
Pyrene	0.245	2,300	--	1,400	7,000	61,000	--	1,400	7,000

## **Appendix A**

### **Permit for Removal of Underground Storage Tanks**





## OFFICE OF THE ILLINOIS STATE FIRE MARSHAL

Division of Petroleum and Chemical Safety

1035 Stevenson Drive

Springfield, Illinois 62703-4259

(217)785-1020 or (217)785-5878

AUG 17 1998

## FOR OFFICE USE ONLY

Facility # 1002029Permit # 3708-98 REMAPPLICATION for Permit for **REMOVAL** of Underground Storage Tanks. (Please type or print clearly)(1) **OWNER OF TANKS** - Corporation, partnership, or other business entity. (Must be mailing address)

WEDRON SILICA CO.

Name

P.O. BOX 119 OLIVE ST.

Street Address

WEDRON

IL.

60557

City

State

Zip

SPENCER ZITKA,

815-433-2449

Contact Person

Phone

(2) **FACILITY** - Facility ID # 1-002029

(Name and address where tanks are located:)

WEDRON SILICA CO.

Name

P.O. BOX 119 OLIVE ST.

Street Address

WEDRON,

IL.

60557

La SALLE

City

State

Zip

County

SPENCER ZITKA,

815-433-2449

Contact Person

Phone

(3) **TANK(S)**: Fill in the appropriate blanks for the tank(s) to be removed. Attach additional sheet(s) if more space is needed.

# of Tanks	Capacity in gallons	Product to be stored	Date tank last used	# of Tanks	Capacity in gallons	Product to be stored	Date tank last used
3							
1 TK1	4,000	Gas / unld	In use				
1 TK2	4,000	Gas / prem	In use				
1 TK3	20,000	Diesel	In use				

(4) **CONTAMINATED SITE** (complete this section for sites where a release has been reported). Reminder: Releases or suspected releases must be reported to IEMA at (800)782-7860 within 24 hours:

IEMA Incident # \_\_\_\_\_

(5) **CONTRACTOR**: I certify under penalty of law that I have personally examined and am familiar with the information submitted in this and all attached documents, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that all information submitted is true, accurate and complete.

PIPECO INC.

Company Name

331-28th STREET

Address

BETTENDORF,

IA.

52722

City

State

Zip

319-344-0700

319-344-8856

Telephone #

Fax #

IL 2034

9-28-98

Contractor License #

Expiration Date

ART WENTWORTH

SCHEDULER

Name of Authorized Representative

Title or Position

Signature

Date

## FOR OFFICE USE ONLY

After receiving an approved permit, the Contractor the permit was issued to or an employee of that contractor (this does not include a subcontractor) shall establish a date certain to perform the UST activity by contacting the Office of the State Fire Marshal, Division of Petroleum and Chemical Safety, by telephone at the Springfield office at (217)785-1020 or (217)785-5878 between 8:30 a.m. and 12:00 p.m., at which time a mutually agreed upon date and time for the UST activity shall be scheduled. **THIS PERMIT IS VALID FOR SIX MONTHS FROM THE APPROVAL DATE.**

Permit is valid until 9-17-98Permit expires on 9-17-98

This office is responsible for the removal of the UST activity

of removal for our inspection on 8-25-98

Approval Date

Approved

2-25-99

Permit Expires

The OSFM REQUIRES the disclosure of the requested information to issue this permit, pursuant to 430 ILCS, Act 15, Gasoline Storage Act. Failure to provide the requested information will result in this permit application not being processed. Such failure will result in the application being returned - it will be returned to the applicant only once (without being denied) and if resubmitted, is expected to be done so within 14 days from the date of return. This form has been approved by the Forms Management Center.

(Complete the back side)

REM1 05/98

(6) **REASON FOR REMOVAL:**

Removing 20,000 and installing new 12,000 Double wall and removing 2-4,000 to get into compliance.

---

---

(7) **NOTICE PRIOR TO REMOVAL** - A 30 day written notice to the Office of the State Fire Marshal is required prior to removal. The notice begins on the date a properly completed Application and fee are received by this Office.

In the event of a reported release, the Office of the State Fire Marshal shall waive the 30 day notice requirement. (Incident number must be entered in Item #6 above).

(8) **APPLICATION REJECTION** - Insufficient information or illegibility can be cause for return or denial.

(9) **PERMIT TO WORK** - No work can proceed without a granted permit in hand and must be available upon request of the Storage Tank Safety Specialist.

(10) **CODE COMPLIANCE** - All work shall be performed per 41 Ill. Adm. Code 170 and shall otherwise be in compliance with any referenced code and standards.

(11) **APPLICANT** - The **RESPONSIBLE CONTRACTOR** must complete this application. A fee of \$100.00 for each site must accompany this application. (Checks or money orders are to be made payable to the Office of the State Fire Marshal. Do not send cash).

Oitman  
JS

COPY

## **Appendix B**

### **Special Waste Manifests**



## STATE OF ILLINOIS

ENVIRONMENTAL PROTECTION AGENCY DIVISION OF LAND POLLUTION CONTROL

P.O. BOX 19276

SPRINGFIELD, ILLINOIS 62794-9276 (217) 782-6761

FOR SHIPMENT OF HAZARDOUS  
AND SPECIAL WASTE

State Form LPC 52 8/81

IL532-0610

EPA Form 8700-22 (Rev. 6-89)

Form Approved OMB No. 2050-0039

PLEASE TYPE

(Form designed for use on 8 1/2 (12-ptch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law, but is required by Illinois law.
3. Generator's Name and Mailing Address <i>Silica Sand Wedcom</i>		Location if Different		A. Illinois Manifest Document Number <b>IL7800802</b> FEE PAID IF APPLICABLE	
4. "24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS"		B. Generator's IL ID Number		C. Transporter's ID Number	
5. Transporter 1 Company Name RS USED OIL SERVICES, INC		6. US EPA ID Number IL0981194715		D. Transporter's Phone ( )	
7. Transporter 2 Company Name		8. US EPA ID Number		E. Transporter's ID Number	
9. Designated Facility Name and Site Address CITY OF CRESTHILL EAST COLLECTION SYSTEM CRESTHILL, IL 60436		10. US EPA ID Number		F. Transporter's Phone ( )	
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers No. Type		13. Total Quantity	14. Unit Wt/Vol
a.		0 0 1 T T		U P O	G
b.					
c.					
d.					
J. Additional Description for Materials Listed Above TICKETS 15 & 15		7800802		K. Handling Codes for Wastes Listed Above in Item #14	
15. Special Handling Instructions and Additional Information					
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.					
Printed/Typed Name <i>BRUCE PATTON</i>		Signature <i>Bruce Patton</i>		Date Month Day Year 11/10/98	
17. Transporter 1 Acknowledgement of Receipt of Materials		Signature <i>Bruce Patton</i>		Date Month Day Year 11/10/98	
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature <i>Bruce Patton</i>		Date Month Day Year 11/10/98	
19. Discrepancy Indication Space					
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.		Signature		Date Month Day Year	

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1004 and 1001, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed \$25,000 per day of violation. Fabrication of this information may result in a fine up to \$50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 5. GENERATOR MAIL TO IEPA  
(RCRA HAZARDOUS AND PCB WASTES ONLY)

In case of a spill call the Illinois Office of Emergency Response at 217/782-7860 and the National Response Center at 800/424-8902 or 202/426-2675.





PLEASE TYPE

(Form designed for use on 8 1/2 (12-pitch) typewriter.)

EPA Form 8700-22 (Rev. 6-89)

Form Approved OMB No. 2050-0039

UNIFORM HAZARDOUS WASTE MANIFEST		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law, but is required by Illinois law.	
3. Generator's Name and Mailing Address <i>Silica Sand</i>		Location If Different		A. Illinois Manifest Document Number <b>IL7800932</b> FEE PAID IF APPLICABLE		
4. "24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS"		6. US EPA ID Number		B. Generator's IL ID Number		
5. Transporter 1 Company Name		7. Transporter 2 Company Name		C. Transporter's ID Number		
8. Designated Facility Name and Site Address EPA: 1125 BROOKSIDE AVENUE INDIANAPOLIS, IN 46202		10. US EPA ID Number		D. Transporter's Phone ( ) 788-534-3300		
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers		E. Transporter's ID Number		
		No.	Type	F. Transporter's Phone ( )		
a.				G. Facility's IL ID Number 9180970023		
b.				H. Facility's Phone ( ) 317-867-8410		
c.				I. Waste No. EPA HW Number		
d.				EPA HW Number		
J. Additional Description for Materials Listed Above TICKETS 15615		K. Handling Codes for Wastes Listed Above In Item #14 7800932				
15. Special Handling Instructions and Additional Information						
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.						
Printed/Typed Name		Signature		Date Month Day Year 11-1-95		
17. Transporter 1 Acknowledgement of Receipt of Materials		Signature		Date Month Day Year		
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		Date Month Day Year		
19. Discrepancy Indication Space						
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.		Signature		Date Month Day Year		

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed \$25,000 per day of violation. Falsification of this information may result in a fine up to \$50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 5. GENERATOR MAIL TO EPA  
(RCRA HAZARDOUS AND PCB WASTES ONLY)

In case of a spill call the Illinois Office of Emergency Response at 217/782-7860 and the National Response Center at 800/424-8802 or 202/426-2675.



PLEASE TYPE (Form designed for use on elite (12-pitch) typewriter.)

<b>UNIFORM HAZARDOUS WASTE MANIFEST</b>		1. Generator's US EPA ID No.	Manifest Document No.	2. Page 1 of	Information in the shaded areas is not required by Federal law, but is required by Illinois law.
3. Generator's Name and Mailing Address. WEDRON SILICA PO BOX 119 SOUTH OLIVE STREET WEDRON, IL 60557		Location If Different		A. Illinois Manifest Document Number <b>IL 7801176</b> FEE PAID IF APPLICABLE	
4. *24 HOUR EMERGENCY AND SPILL ASSISTANCE NUMBERS*		6. US EPA ID Number <b>IL0001194715</b>		B. Generator's IL ID Number	
5. Transporter 1 Company Name <b>RS USED OIL SERVICES, INC.</b>		8. US EPA ID Number		C. Transporter's ID Number	
7. Transporter 2 Company Name		10. US EPA ID Number		D. Transporter's Phone	
9. Designated Facility Name and Site Address <b>SEER</b> <b>122 DIVISION STREET</b> <b>MISHAWAKA IND. 46505</b>				E. Transporter's ID Number	
				F. Transporter's Phone	
				G. Facility's IL ID Number <b>219 259-0507</b>	
				H. Facility's Phone	
11. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)		12. Containers No.	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. NOT REGULATED NON HAZ LIQUID MISC		1	1	1	EPA HW Number
b.					EPA HW Number
c.					EPA HW Number
d.					EPA HW Number
J. Additional Description for Materials Listed Above <b>TICKETS#</b>		7801176		K. Handling Codes for Wastes Listed Above in Item #14	
15. Special Handling Instructions and Additional Information					
16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations. If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.					
Printed/Typed Name <b>TED DELL</b>		Signature <i>Ted Dell</i>		Date Month Day Year <b>12/1/92</b>	
17. Transporter 1 Acknowledgement of Receipt of Materials		Signature <i>Ernest E. Verrey</i>		Date Month Day Year <b>12/1/92</b>	
Printed/Typed Name <b>ERNEST E. VERREY</b>					
18. Transporter 2 Acknowledgement of Receipt of Materials		Signature		Date	
Printed/Typed Name					
19. Discrepancy Indication Space					
20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in item 19.					
Printed/Typed Name		Signature		Date Month Day Year	

This Agency is authorized to require, pursuant to Illinois Revised Statute, 1989, Chapter 111 1/2, Section 1004 and 1021, that this information be submitted to the Agency. Failure to provide this information may result in a civil penalty against the owner or operator not to exceed \$25,000 per day of violation. Falsification of this information may result in a fine up to \$50,000 per day of violation and imprisonment up to 5 years. This form has been approved by the Forms Management Center.

COPY 5: GENERATOR MAIL TO IEPA  
6004 HAZARDOUS AND PCB WASTE ONLY

## **Appendix C**

### **Certificate of Destruction**

FATLAN TRUCKING INC.  
6700 So. State Rt. 53  
Gardner, Il. 60424  
(815)237-2212  
Fax 237-0703

FILE COPY

Date: 11/10/98

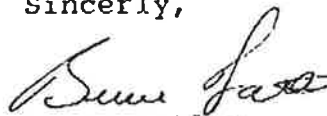
CERTIFICATE OF DESTRUCTION / UNDERGROUND STORAGE TANKS

Fatlan Trucking, Inc. hereby certifies that 2-4000 GALLON  
STEEL underground storage tank(s) were cut and  
cleaned by Fatlan Trucking, Inc., in accordance with the Office of  
the Illinois State Fire Marshal and the Illinois Environmental  
Protection Agency. The aforementioned tank(s) were transported off  
site as scrap steel to BELSON'S SCRAP & STEEL  
KANKAKEE, IL, an Illinois recycling facility,  
where they will be dismantled and sent to a steel mill for re-melting.

The above mentioned tank(s) originated from WEDRON SILICA CO.  
WEDRON, IL.

Fatlan Trucking, inc. is no longer responsible for the above tank(s),  
once they reach the above scrap recycling facility.

Sincerely,

  
Bruce Fatlan  
Corp. Secretary



FATLAN TRUCKING INC.  
6700 So. State Rt. 53  
Gardner, Il. 60424  
(815)237-2212  
Fax 237-0703

**FILE COPY**

Date: 11/10/98

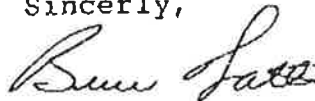
**CERTIFICATE OF DESTRUCTION / UNDERGROUND STORAGE TANKS**

Fatlan Trucking, Inc. hereby certifies that 1 - 20,000 GALLON  
STEEL underground storage tank(s) were cut and  
cleaned by Fatlan Trucking, Inc., in accordance with the Office of  
the Illinois State Fire Marshal and the Illinois Environmental  
Protection Agency. The aforementioned tank(s) were transported off  
site as scrap steel to WHITTAKER SCRAP  
EARLVILLE, IL., an Illinois recycling facility,  
where they will be dismantled and sent to a steel mill for re-melting.

The above mentioned tank(s) originated from WEEDRON SILICA CO.  
WEEDRON, IL.

Fatlan Trucking, inc. is no longer responsible for the above tank(s),  
once they reach the above scrap recycling facility.

Sincerely,



Bruce Fatlan  
Corp. Secretary

## **Appendix D**

### **Laboratory Report**

# Prairie



An Analytical  
Testing Laboratory

# Analytical

Systems, INCORPORATED

Terra Environmental Services, Inc.  
406 First Street  
LaSalle, IL 61301

1265 Capital Airport Drive  
Springfield, IL 62707-8413

Phone: 217-753-1148  
FAX: 217-753-1152

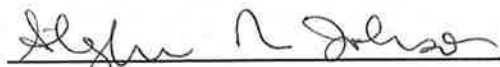
Client Project: **Wedron Silica - 2WS002**  
Date Received: 12-Nov-98

PAS Project Code: TES-006  
Date Reported: 18-Nov-98

Sample Description:	SS-1-01	SS-1-02	SS-1-04	SS-1-05	SS-1-06
PAS Sample Number:	9811127731	9811127732	9811127734	9811127735	9811127736
Date Sampled:	10-Nov-98	10-Nov-98	10-Nov-98	10-Nov-98	10-Nov-98
Date Analyzed:	17-Nov-98	17-Nov-98	17-Nov-98	17-Nov-98	17-Nov-98

## Semi-Volatile Organic Compound(s) Analysis - PAH(s)

<u>Analyte(s)</u>	RL mg/kg	Result mg/kg	Result mg/kg	Result mg/kg	Result mg/kg	Result mg/kg	EPA Method
Naphthalene	0.660	<0.660	<0.660	<0.660	<0.660	<0.660	8270C
Acenaphthene	1.200	<1.200	<1.200	<1.200	<1.200	<1.200	8270C
Anthracene	0.660	<0.660	<0.660	<0.660	<0.660	<0.660	8270C
Fluoranthene	0.660	<0.660	<0.660	<0.660	<0.660	<0.660	8270C
Fluorene	0.140	<0.140	<0.140	<0.140	<0.140	<0.140	8270C
Pyrene	0.180	0.245	<0.180	<0.180	<0.180	<0.180	8270C
Benzo (a) Anthracene	0.0087	<0.0087	<0.0087	<0.0087	<0.0087	<0.0087	8270C
Benzo (a) Pyrene	0.015	<0.015	<0.015	<0.015	<0.015	<0.015	8270C
Benzo (b) Fluoranthene	0.011	<0.011	<0.011	<0.011	<0.011	<0.011	8270C
Benzo (k) Fluoranthene	0.011	<0.011	<0.011	<0.011	<0.011	<0.011	8270C
Chrysene	0.100	<0.100	<0.100	<0.100	<0.100	<0.100	8270C
Dibenzo (a,h) Anthracene	0.020	<0.020	<0.020	<0.020	<0.020	<0.020	8270C
Indeno (1,2,3-c,d) Pyrene	0.029	<0.029	<0.029	<0.029	<0.029	<0.029	8270C
Acenaphthylene	0.660	<0.660	<0.660	<0.660	<0.660	<0.660	8270C
Benzo (g,h,i) Perylene	0.051	<0.051	<0.051	<0.051	<0.051	<0.051	8270C
Phenanthrene	0.660	<0.660	<0.660	<0.660	<0.660	<0.660	8270C

  
Stephen R. Johnson, Laboratory Director

Terra Environmental Services, Inc.  
406 First Street  
LaSalle, IL 61301

1265 Capital Airport Drive  
Springfield, IL 62707-8413

Phone: 217-753-1148  
FAX: 217-753-1152

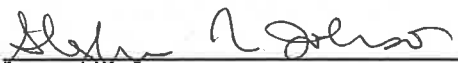
Client Project: **Wedron Silica - 2WS002**  
Date Received: 12-Nov-98

PAS Project Code: TES-006  
Date Reported: 18-Nov-98

Sample Description:	SS-1-01	SS-1-02	SS-1-04	SS-1-05	SS-1-06
PAS Sample Number:	9811127731	9811127732	9811127734	9811127735	9811127736
Date Sampled:	10-Nov-98	10-Nov-98	10-Nov-98	10-Nov-98	10-Nov-98
Date Analyzed:	17-Nov-98	17-Nov-98	17-Nov-98	17-Nov-98	17-Nov-98

### Volatile Organic Compound(s) Analysis - BTEX

<u>Analyte(s)</u>	RL mg/kg	Result mg/kg	Result mg/kg	Result mg/kg	Result mg/kg	Result mg/kg	EPA Method
Benzene	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	5030B/8260B
Toluene	0.002	0.002	<0.002	<0.002	<0.002	<0.002	5030B/8260B
Ethylbenzene	0.002	0.038	<0.002	<0.002	<0.002	<0.002	5030B/8260B
Total Xylenes	0.005	0.334	<0.005	<0.005	<0.005	<0.005	5030B/8260B

  
 Stephen R. Johnson, Laboratory Director



**Prairie**



An Analytical  
Testing Laboratory

**Analytical**  
Systems, INCORPORATED

Terra Environmental Services, Inc.  
406 First Street  
LaSalle, IL 61301

1265 Capital Airport Drive  
Springfield, IL 62707-8413

Phone: 217-753-1148  
FAX: 217-753-1152

Client Project: **Wedron Silica - 2WS002**  
Date Received: 12-Nov-98

PAS Project Code: **TES-006**  
Date Reported: 18-Nov-98

Sample Description:	SS-2-01	SS-2-02	SS-2-03	SS-2-04	SS-2-05
PAS Sample Number:	9811127738	9811127739	9811127740	9811127741	9811127742
Date Sampled:	10-Nov-98	10-Nov-98	10-Nov-98	10-Nov-98	10-Nov-98
Date Analyzed:	17-Nov-98	17-Nov-98	17-Nov-98	17-Nov-98	17-Nov-98

**Volatile Organic Compound(s) Analysis - BTEX**

<u>Analyte(s)</u>	RL mg/kg	Result mg/kg	Result mg/kg	Result mg/kg	Result mg/kg	Result mg/kg	EPA Method
Benzene	0.002	<0.002	<0.002	<0.002	0.003	<0.002	5030B/8260B
Toluene	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	5030B/8260B
Ethylbenzene	0.002	<0.002	<0.002	<0.002	<0.002	<0.002	5030B/8260B
Total Xylenes	0.005	<0.005	<0.005	<0.005	<0.005	<0.005	5030B/8260B

Stephen R. Johnson, Laboratory Director

## **Appendix E**

### **Photographs of Tank Removal Activities**

## Gasoline Tanks



**October 29, 1998**

**Underground storage tank located  
behind the dispensers.**

**Looking northwest**



**November 10, 1998**

**First tank removed from excavation**

**Looking south**

## Diesel Tank

**October 29, 1998**

**Diesel underground storage tank  
dispenser**

**Looking northwest**



**November 10, 1998**

**Removal of sludge**

**Looking south**



## Diesel Tank



November 10, 1998

Removal of sludge

Looking southeast

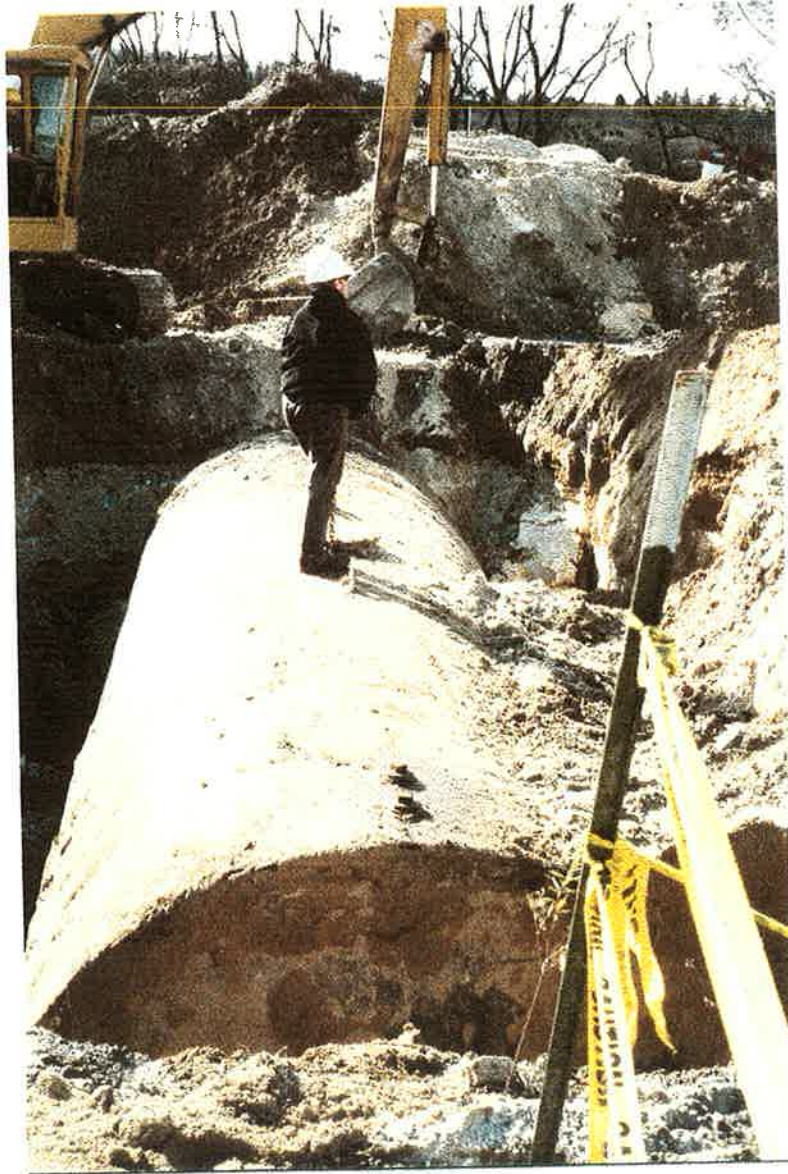


November 10, 1998

Removal of vent pipe

Looking southeast

## **Diesel Tank**



**November 10, 1998**

**Excavation around diesel tank**

**Looking south**



## **Diesel Tank**



**November 10, 1998**

**Tank being lifted out of excavation**

**Looking south**



**November 10, 1998**

**Tank being lifted out of excavation**

**Looking south**

## Diesel Tank



November 10, 1998

Diesel tank placed on the ground for  
inspection and cleaning

Looking east



November 10, 1998

Preparation for cleaning interior of tank

Looking east



# Diesel Tank

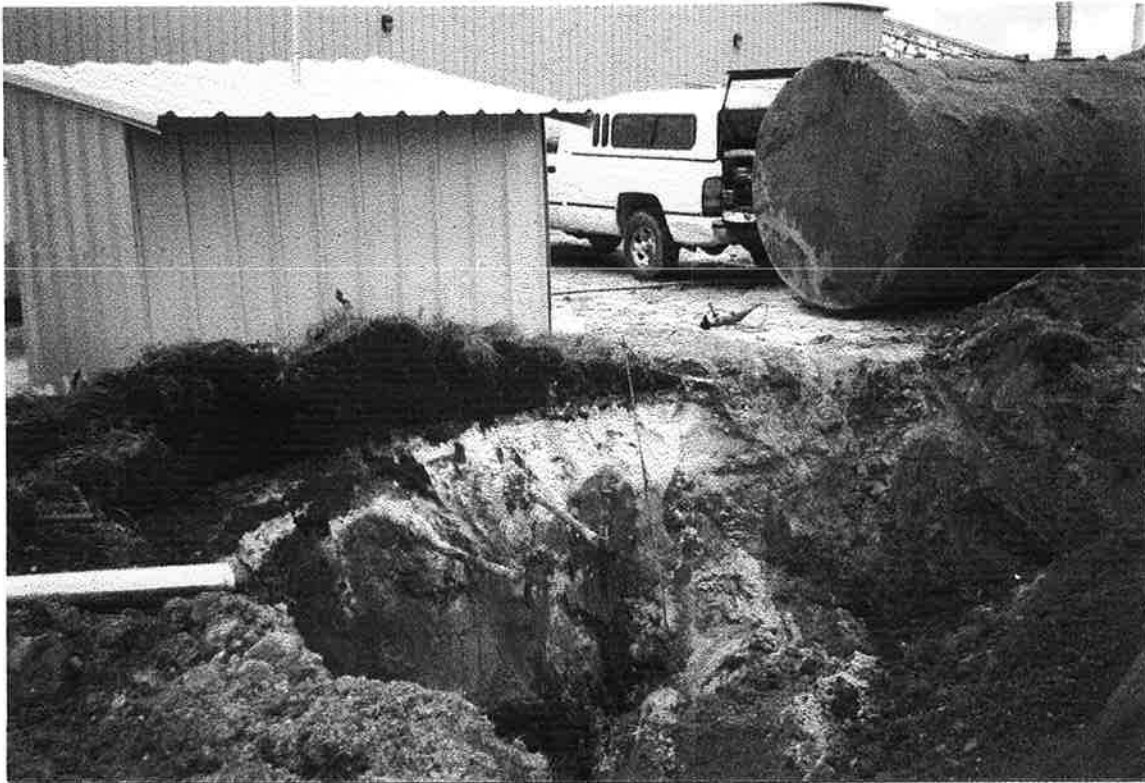


**November 10, 1998**

**Diesel tank ready for shipment**



## **Gasoline Tanks**



**November 10, 1998**

**Second tank removed from the  
excavation**

**Looking southeast**

## **Appendix F**

### **Logs of OSFM Underground Storage Tank Removal**



OFFICE OF THE STATE FIRE MARSHAL  
DIVISION OF PETROLEUM AND CHEMICAL SAFETY  
1035 STEVENSON DRIVE  
SPRINGFIELD, ILLINOIS 62703-4259

FACILITY # 1002029  
PERMIT # 3718-98 Rev  
DATE REMOVED 11-10-98  
IEMA # NA

COPY

LOG OF UNDERGROUND STORAGE TANK REMOVAL

OWNER

NAME: WEDRON SILICA CO.  
ADDRESS: P.O. Box 119 OLIVE ST.  
CITY: WEDRON  
STATE: IL ZIP: 60557  
PHONE: 815-433-2449

FACILITY

NAME: WEDRON SILICA CO.  
ADDRESS: P.O. Box 119 OLIVE ST.  
CITY: WEDRON  
COUNTY: LASALLE ZIP: 60557  
PHONE: 815-433-2449

STATUS: MINOR        SIGNIFICANT        MAJOR        APPEARS TO BE NO RELEASE ✓

AREA OF CONTAMINATION: TANK FLOOR        WALLS        PIPE TRENCH        OTHER       

GROUND WATER CONTAMINATED: YES        NO ✓ ANY WATER WELLS IN AREA? YES        NO ✓

NUMBER OF TANKS REMOVED: 3rd of 3

SIZE OF EACH TANK REMOVED: 20 M        M        M        M        M        M        M

PRODUCT STORED: DIESEL

DOES THIS TANK APPEAR TO HAVE LEAKED? (Y OR N) N

NUMBER OF TANKS TO REMAIN IN GROUND: 1

SIZE OF EACH TANK: 12 M        M        M        M        M        M        M

PRODUCT STORED: DIESEL

COMMENTS: FIELD TESTS FOR CONTAMINATION WERE NEGATIVE.

COPY

REMOVAL CONTRACTOR:

NAME: PIPECO INC.  
ADDRESS: 331-28th ST.  
CITY: BETTENDORF STATE: IA  
PHONE: 319-344-0700 ZIP: 52722  
REGISTRATION #: IL 2034

Ken Altman  
STORAGE TANK SAFETY SPECIALIST



OFFICE OF THE STATE FIRE MARSHAL  
DIVISION OF PETROLEUM AND CHEMICAL SAFETY  
1035 STEVENSON DRIVE  
SPRINGFIELD, ILLINOIS 62703-4259

FACILITY # 100202  
PERMIT # 3718-981  
DATE REMOVED 11-10-  
IEMA # \_\_\_\_\_

**COPY**

LOG OF UNDERGROUND STORAGE TANK REMOVAL

OWNER	FACILITY
NAME: <u>WEDRON SILICA CO.</u>	NAME: <u>WEDRON SILICA CO.</u>
ADDRESS: <u>P.O. Box 119 OLIVE ST.</u>	ADDRESS: <u>P.O. Box 119 OLIVE ST.</u>
CITY: <u>WEDRON</u>	CITY: <u>WEDRON</u>
STATE: <u>IL</u> ZIP: <u>60557</u>	COUNTY: <u>LA SALLE</u> ZIP: <u>60557</u>
PHONE: <u>815-433-2449</u>	PHONE: <u>815-433-2449</u>
STATUS: MINOR _____ SIGNIFICANT _____ MAJOR _____ APPEARS TO BE NO RELEASE <input checked="" type="checkbox"/>	
AREA OF CONTAMINATION: TANK FLOOR _____ WALLS _____ PIPE TRENCH _____ OTHER _____	
GROUND WATER CONTAMINATED: YES _____ NO <input checked="" type="checkbox"/> ANY WATER WELLS IN AREA? YES _____ NO <input checked="" type="checkbox"/>	
NUMBER OF TANKS REMOVED: <u>1 &amp; 2 of 3</u>	
SIZE OF EACH TANK REMOVED: <u>4 M 4 M</u> _____ M _____ M _____ M _____ M _____ M _____ M _____ M	
PRODUCT STORED: <u>(GASOLINE)</u> _____	
DOES THIS TANK APPEAR TO HAVE LEAKED? (Y OR N) <u>N N</u> _____	
NUMBER OF TANKS TO REMAIN IN GROUND: <u>1</u>	
SIZE OF EACH TANK: <u>12 M</u> _____ M _____ M _____ M _____ M _____ M _____ M _____ M	
PRODUCT STORED: <u>DIESEL</u> _____	
COMMENTS: <u>FIELD TESTS FOR CONTAMINATION WERE NEGATIVE</u>	

REMOVAL CONTRACTOR:

NAME: PIPE CO INC.  
ADDRESS: 331-28th ST.  
CITY: BETTENDORF STATE: IA  
PHONE: 319-344-0700 ZIP: 52722  
REGISTRATION #: IL 2034

**COPY**

Ken Oldman  
STORAGE TANK SAFETY SPECIALIST



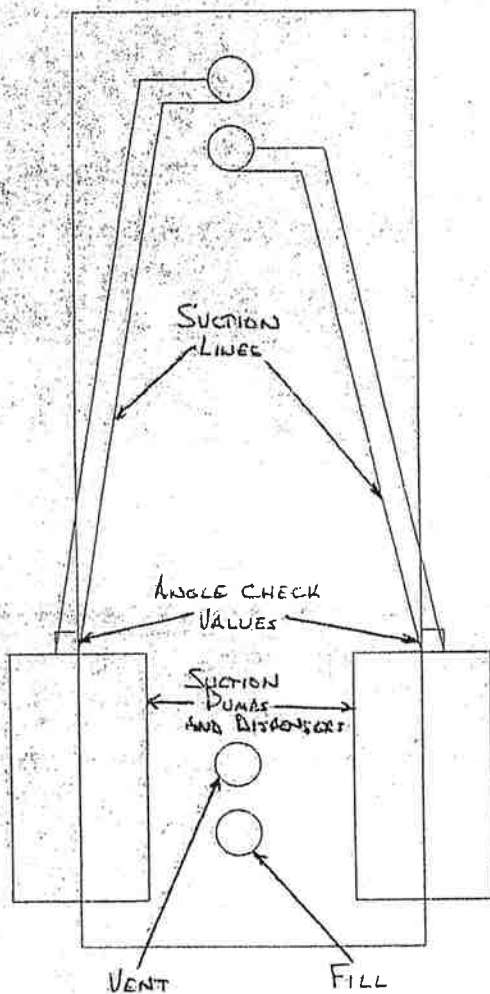


## **ATTACHMENT 2**

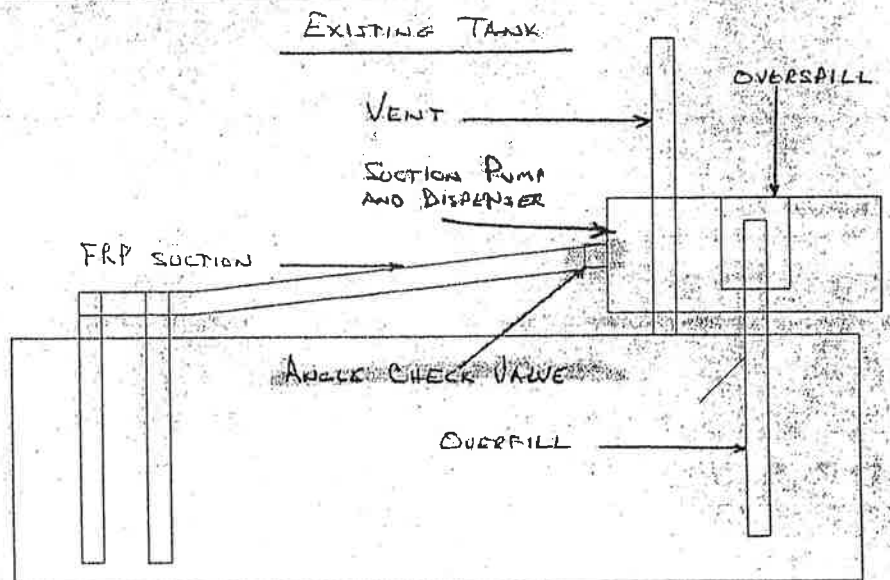
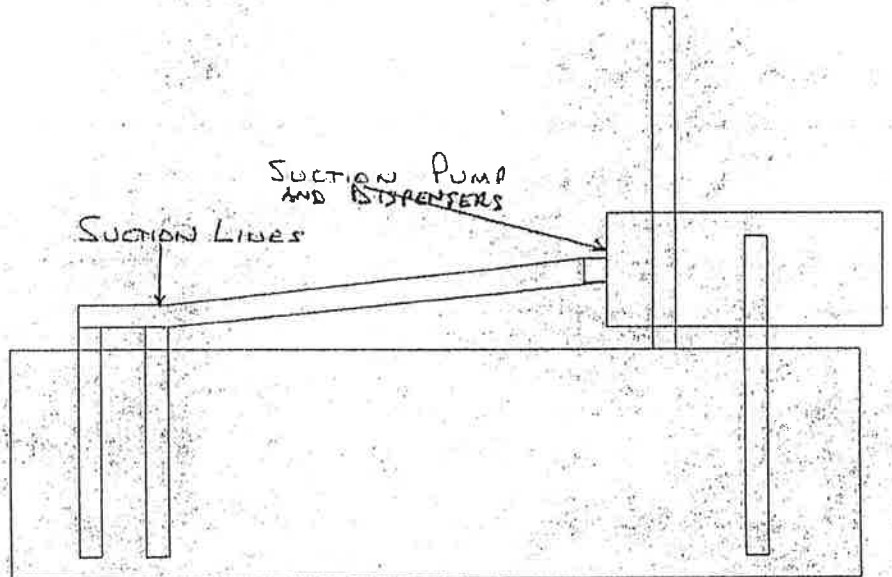
### **1994 Diagram of the 20,000-Gallon Diesel UST System**

# WEDRON SILICA

20,000 UST



Top View



UPGRADED TANK

SIDE VIEW

JUL 19 1994

DIV. OF PETROLEUM &  
CHEMICAL SAFETY

JUN 24 1994

DIV. OF PETROLEUM &  
CHEMICAL SAFETY



### **ATTACHMENT 3**

**Three Undated, Oblique Aerial Photographs**











#### **ATTACHMENT 4**

#### **Photographs of Current 750-Gallon Gasoline AST System**







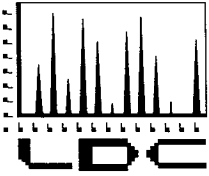






## **APPENDIX B**

### **Portion of Laboratory Analytical Reports Related to Soil Samples Collected Near the Former Gasoline USTs**



**LABORATORY DATA CONSULTANTS, INC.**  
2701 Loker Ave. West, Suite 220, Carlsbad, CA 92010 Bus: 760-827-1100 Fax: 760-827-1099

GZA GeoEnvironmental, Inc.  
20900 Swenson Dr. Suite 150  
Waukesha, WI 53186  
Atten: Bernard G. Fenelon

January 20, 2014

SUBJECT: Wedron Community Groundwater, Data Validation

Dear Mr. Fenelon,

Enclosed are the final validation reports for the fractions listed below. These SDGs were received on December 20, 2013. Attachment 1 is a summary of the samples that were reviewed for each analysis.

**LDC Project # 31068:**

<b><u>SDG #</u></b>	<b><u>Fraction</u></b>
A134906	Volatiles, Lead, Fractional Organic Carbon, pH
A134908/4089524	

The data validation was performed under EPA Level III/IV guidelines. The analyses were validated using the following documents, as applicable to each method:

- Quality Assurance Project Plan for EPA Docket No. RCRA 05-2013-0011, Wedron, Illinois, November 2013.
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review, June 2008
- USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review, January 2010

Please feel free to contact us if you have any questions.

Sincerely,

Christina Rink  
Project Manager/Senior Chemist

**LDC #31068 (GZA GeoEnvironmental, Inc. - Waukesha, WI / Wedron Community Groundwater)**

31068ST.wpd



**Laboratory Data Consultants, Inc.  
Data Validation Report**

**Project/Site Name:** Wedron Community Groundwater  
**Collection Date:** December 3, 2013  
**LDC Report Date:** January 20, 2014  
**Matrix:** Water  
**Parameters:** Volatiles  
**Validation Level:** EPA Level III  
**Laboratory:** Environmental Chemistry Consulting Services, Inc.  
**Sample Delivery Group (SDG):** A134906

**Sample Identification**

Storage Tank  
Equipment Blank  
Equipment BlankMS  
Equipment BlankMSD

## Introduction

This data review covers 4 water samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan for EPA Docket No. RCRA 05-2013-0011, Wedron, Illinois (November 2013) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Raw data were not reviewed for this SDG. The review was based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

## III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

Date	Compound	%RSD	Associated Samples	Flag	A or P
12/2/13	Bromomethane Chloroethane Trichlorofluoromethane	17.37342 15.45346 20.24754	All samples in SDG A134906	J (all detects) UJ (all non-detects)	A

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination ( $r^2$ ) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
12/4/13	Acetone 2-Butanone Chloromethane 1,2-Dibromo-3-chloropropane 4-Methyl-2-pentanone Methyl-tert-butyl ether Naphthalene Tetrahydrofuran	23.2 24.4 21.9 26.2 24.9 21.5 21.7 24.8	All samples in SDG A134906	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
12/2/13	Dichlorodifluoromethane 1,2,3-Trichloropropane Trichlorofluoromethane	33.8 20.4 21.8	All samples in SDG A134906	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

## V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
A312011_BLK1	12/4/13	Dichlorodifluoromethane	0.12 ug/L	All samples in SDG A134906

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
Storage Tank	Dichlorodifluoromethane	0.18 ug/L	0.18U ug/L

Sample Equipment Blank was identified as an equipment blank. No volatile contaminants were found with the following exceptions:



Blank ID	Sampling Date	Compound	Concentration	Associated Samples
Equipment Blank	12/3/13	Acetone Carbon disulfide Chloroform Toluene o-Xylene	5.8 ug/L 0.11 ug/L 0.42 ug/L 0.080 ug/L 0.10 ug/L	No associated samples in this SDG

## VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits.

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits.

## VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

## IX. Regional Quality Assurance and Quality Control

Not applicable.

## X. Internal Standards

All internal standard areas and retention times were within QC limits.

## XI. Target Compound Identifications

Raw data were not reviewed for this SDG.

## XII. Compound Quantitation

Raw data were not reviewed for this SDG.

## XIII. Tentatively Identified Compounds (TICs)

Raw data were not reviewed for this SDG.

## XIV. System Performance

Raw data were not reviewed for this SDG.

## **XV. Overall Assessment of Data**

Data flags are summarized at the end of this report if data has been qualified.

## **XVI. Field Duplicates**

No field duplicates were identified in this SDG.

**Wedron Community Groundwater  
Volatiles - Data Qualification Summary - SDG A134906**

SDG	Sample	Compound	Flag	A or P	Reason
A134906	Storage Tank Equipment Blank	Bromomethane Chloroethane Trichlorofluoromethane	J (all detects) UJ (all non-detects)	A	Initial calibration (%RSD)
A134906	Storage Tank Equipment Blank	Acetone 2-Butanone Chloromethane 1,2-Dibromo-3-chloropropane 4-Methyl-2-pentanone Methyl-tert-butyl ether Naphthalene Tetrahydrofuran	J (all detects) UJ (all non-detects)	A	Continuing calibration (CCV %D)
A134906	Storage Tank Equipment Blank	Dichlorodifluoromethane 1,2,3-Trichloropropane Trichlorofluoromethane	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D)

**Wedron Community Groundwater  
Volatiles - Laboratory Blank Data Qualification Summary - SDG A134906**

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
A134906	Storage Tank	Dichlorodifluoromethane	0.18U ug/L	A

**Wedron Community Groundwater  
Volatiles - Field Blank Data Qualification Summary - SDG A134906**

No Sample Data Qualified in this SDG



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## Revised Report

GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/12/2014

### Equipment Blank

Date Sampled

A134906-02 (Water)

12/03/2013 15:45

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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### ECCS

#### Volatile Organic Compounds by Method 8260 - Purge and Trap

Preparation Batch: A312011

Acetone	5.8 J	3.4	20	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	J
Benzene	ND	0.089	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Bromobenzene	ND	0.084	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Bromochloromethane	ND	0.31	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Bromodichloromethane	ND	0.077	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Bromoform	ND	0.088	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Bromomethane	ND J	0.59	5.0	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
2-Butanone	ND J	3.0	20	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
n-Butyl Benzene	ND	0.14	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
sec-Butyl Benzene	ND	0.13	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
tert-Butylbenzene	ND	0.12	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Carbon disulfide	0.11	0.053	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	J
Carbon tetrachloride	ND	0.038	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Chlorobenzene	ND	0.073	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Chloroethane	ND J	0.25	5.0	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Chloroform	0.42	0.062	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	J
Chloromethane	ND J	0.16	2.0	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
2-Chlorotoluene	ND	0.075	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
4-Chlorotoluene	ND	0.073	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,2-Dibromo-3-chloropropane	ND J	0.25	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Dibromochloromethane	ND	0.091	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,2-Dibromoethane (EDB)	ND	0.13	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Dibromomethane	ND	0.14	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,2-Dichlorobenzene	ND	0.076	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,4-Dichlorobenzene	ND	0.070	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,3-Dichlorobenzene	ND	0.096	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Dichlorodifluoromethane	ND J	0.11	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,1-Dichloroethane	ND	0.12	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,2-Dichloroethane	ND	0.078	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
trans-1,2-Dichloroethene	ND	0.11	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
cis-1,2-Dichloroethene	ND	0.11	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,1-Dichloroethene	ND	0.14	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
2,2-Dichloropropane	ND	0.14	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,2-Dichloropropane	ND	0.10	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,3-Dichloropropane	ND	0.11	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
cis-1,3-Dichloropropene	ND	0.061	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
trans-1,3-Dichloropropene	ND	0.096	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,1-Dichloropropene	ND	0.11	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Diisopropyl Ether	ND	0.15	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Ethylbenzene	ND	0.054	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	

02/15/14





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## Revised Report

GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/12/2014

### Equipment Blank

A134906-02 (Water)

Date Sampled  
12/03/2013 15:45

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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### ECCS

#### Volatile Organic Compounds by Method 8260 - Purge and Trap

Preparation Batch: A312011

Hexachlorobutadiene	ND	0.13	2.0	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
n-Hexane	ND	0.21	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
2-Hexanone	ND	0.95	20	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Isopropylbenzene	ND	0.081	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
p-Isopropyltoluene	ND	0.085	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Methylene chloride	ND	0.14	2.0	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
4-Methyl-2-pentanone	ND JS	0.77	20	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Methyl t-Butyl Ether	ND JS	0.14	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Naphthalene	ND JS	0.088	5.0	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
n-Propyl Benzene	ND	0.10	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Styrene	ND	0.065	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,1,1,2-Tetrachloroethane	ND	0.11	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	0.099	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Tetrachloroethene	ND	0.081	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Tetrahydrofuran	ND JS	1.2	10	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
<b>Toluene</b>	<b>0.080</b>	0.053	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	J
1,2,3-Trichlorobenzene	ND	0.045	2.0	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,2,4-Trichlorobenzene	ND	0.077	2.0	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,1,1-Trichloroethane	ND	0.10	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,1,2-Trichloroethane	ND	0.10	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Trichloroethene	ND	0.062	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Trichlorofluoromethane	ND JS	0.13	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	LC
1,2,3-Trichloropropane	ND JS	0.15	1.0	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,1,2-Trichlorotrifluoroethane	ND	0.13	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,3,5-Trimethylbenzene	ND	0.075	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
1,2,4-Trimethylbenzene	ND	0.060	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
Vinyl chloride	ND	0.16	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
m,p-Xylene	ND	0.057	1.0	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	
<b>o-Xylene</b>	<b>0.10</b>	0.058	0.50	ug/L	1	12/04/2013	12/04/2013 18:01	EPA 8260B	J
Surrogate: Dibromofluoromethane			97.1 %	82.2-117		12/04/2013	12/04/2013 18:01	EPA 8260B	
Surrogate: Toluene-d8			98.7 %	82.6-111		12/04/2013	12/04/2013 18:01	EPA 8260B	
Surrogate: 4-Bromofluorobenzene			95.6 %	88.4-108		12/04/2013	12/04/2013 18:01	EPA 8260B	

02/15/14

LDC #: 31068A1 **VALIDATION COMPLETENESS WORKSHEET**

SDG #: A134906 Level III

Laboratory: Environmental Chemistry Consulting Services, Inc.

Date: 1/15/14

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

**METHOD:** GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/03/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	2 RSD $\leq$ 30 / 15? r✓
IV.	Continuing calibration/ICV	SW	CCV/ICV $\leq$ 20?
V.	Blanks	SW	
VI.	Surrogate spikes	A	
VII.	Matrix spike/Matrix spike duplicates	A	
VIII.	Laboratory control samples	A	ICS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	A	
XI.	Target compound identification	N	
XII.	Compound quantitation/RL/LOQ/LODs	N	
XIII.	Tentatively identified compounds (TICs)	N	
XIV.	System performance	N	
XV.	Overall assessment of data	A	
XVI.	Field duplicates	N	
XVII.	Field blanks	SW	EB = 2

Note: A = Acceptable  
N = Not provided/applicable  
SW = See worksheet

ND = No compounds detected  
R = Rinsate  
FB = Field blank

D = Duplicate  
TB = Trip blank  
EB = Equipment blank

Validated Samples:

Water

1	Storage Tank	11	A312011-B1k1	21		31	
2	Equipment Blank	12		22		32	
3	Equipment BlankMS	13		23		33	
4	Equipment BlankMSD	14		24		34	
5		15		25		35	
6		16		26		36	
7		17		27		37	
8		18		28		38	
9		19		29		39	
10		20		30		40	

## TARGET COMPOUND WORKSHEET

### METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC.1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO.1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP. <i>n-Hexane</i>
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ. <i>Tetrahydrofuran</i>
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR.
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 31068A1

## VALIDATION FINDINGS WORKSHEET

### Initial Calibration

Page: 1 of 1

Reviewer: JVG

2nd Reviewer: 9

**METHOD:** GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?

Y N N/A Were percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?

Was a curve fit used for evaluation? If yes, what was the acceptance criteria used for evaluation?  $r^2$  20.99

☒ Y ☐ N ☐ N/A Did the initial calibration meet the acceptance criteria?

Y(N)N/A Were all %RSDs and RRFs within the validation criteria of  $\leq 30/15$  %RSD and  $\geq 0.05$  RRF ?

[illegible]



LDC #: 31068 A1

## VALIDATION FINDINGS WORKSHEET

### Continuing Calibration

Page: 1 of 1

Reviewer: JVG

2nd Reviewer: CS

**METHOD:** GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

(Y) N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's ?

Were all %D and RRFs within the validation criteria of  $\leq 20$  %D and  $\geq 0.05$  RRF ?

[illegible]

LDC #: 31068 B1**VALIDATION FINDINGS WORKSHEET**  
**Blanks**Page: 1 of 1  
Reviewer: SVG  
2nd Reviewer: OL**METHOD:** GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

☒ **Y** **N** **N/A** Was a method blank associated with every sample in this SDG?☒ **Y** **N** **N/A** Was a method blank analyzed at least once every 12 hours for each matrix and concentration?☒ **Y** **N** **N/A** Was there contamination in the method blanks? If yes, please see the qualifications below.Blank analysis date: 12/04/13Conc. units: ug/LAssociated Samples: All(MD)

Compound	Blank ID	Sample Identification							
	<u>A312011-B1K1</u>	<u>1</u>							
<u>JJ</u>	<u>0.12</u>	<u>0.18 / U</u>							

Blank analysis date: \_\_\_\_\_

Conc. units: \_\_\_\_\_

Associated Samples: \_\_\_\_\_

Compound	Blank ID	Sample Identification							

All results were qualified using the criteria stated below except those circled.

Note: Common contaminants such as Methylene chloride, Acetone, 2-Butanone, Carbon disulfide and TICs that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 31068B1**VALIDATION FINDINGS WORKSHEET**  
**Field Blanks**Page: 1 of 1Reviewer: JVG2nd Reviewer: OL**METHOD:** GC/MS VOA (EPA SW 846 Method 8260B)☒ **Y** ☐ **N** ☐ **N/A** Were field blanks identified in this SDG?☒ **Y** ☐ **N** ☐ **N/A** Were target compounds detected in the field blanks?**Blank units:** ug/L **Associated sample units:** ug/L**Sampling date:** 12/03/13**Field blank type:** (circle one) Field Blank / Rinsate / Trip Blank / Other: EB **Associated Samples:** None

Compound	Blank ID	Sample Identification							
	<u>2</u>	<u>10x/5x</u>	<u>+</u>						
<u>F</u>	<u>5.8</u>	<u>58</u>							
<u>G</u>	<u>0.11</u>	<u>0.55</u>							
<u>K</u>	<u>0.42</u>	<u>2.1</u>							
<u>CC</u>	<u>0.080</u>	<u>0.4</u>	<u>0.12/0.02</u>						
<u>SSS</u>	<u>0.10</u>	<u>0.5</u>							

**Blank units:** \_\_\_\_\_ **Associated sample units:** \_\_\_\_\_**Sampling date:** \_\_\_\_\_**Field blank type:** (circle one) Field Blank / Rinsate / Trip Blank / Other: \_\_\_\_\_ **Associated Samples:** \_\_\_\_\_

Compound	Blank ID	Sample Identification							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Wedron Community Groundwater  
**Collection Date:** December 3 through December 4, 2013  
**LDC Report Date:** January 17, 2014  
**Matrix:** Soil  
**Parameters:** Volatiles  
**Validation Level:** EPA Level III & IV  
**Laboratory:** Environmental Chemistry Consulting Services, Inc.  
**Sample Delivery Group (SDG):** A134908

### Sample Identification

WS-SB-GP-1 (6-8')	Duplicate 2
WS-SB-GP-1 (18-20')**	WS-SB-GP-14 (6-8')
WS-SB-GP-2 (14-16')	WS-SB-GP-14 (12-15')
WS-SB-GP-2 (18-20')	MeOH Blank
WS-SB-GP-3 (4-6')	WS-SB-GP-1 (6-8')MS
WS-SB-GP-4 (4-6')	WS-SB-GP-1 (6-8')MSD
WS-SB-GP-5 (2-4')**	WS-SB-GP-11 (8-10')MS
WS-SB-GP-6 (0-2')	WS-SB-GP-11 (8-10')MSD
Duplicate 1	
WS-SB-GP-7 (2-4')	
WS-SB-GP-8 (2-4')	
WS-SB-GP-7 (8-9')	
WS-SB-GP-8 (8-10')	
WS-SB-GP-9 (8-10')	
WS-SB-GP-10 (8-10')	
WS-SB-GP-11 (8-10')	
WS-SB-GP-12 (6-8')	
WS-SB-GP-12 (12-15')	
WS-SB-GP-13 (6-8')**	
WS-SB-GP-13 (13-15')	

\*\*Indicates sample underwent EPA Level IV review

## Introduction

This data review covers 28 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 8260B for Volatiles.

This review follows the Quality Assurance Project Plan for EPA Docket No. RCRA 05-2013-0011, Wedron, Illinois (November 2013) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent an EPA Level IV review. An EPA Level III review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by EPA Level III criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.



## I. Technical Holding Times

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## II. GC/MS Instrument Performance Check

Instrument performance was checked at 12 hour intervals.

All ion abundance requirements were met.

## III. Initial Calibration

Initial calibration was performed using required standard concentrations.

Percent relative standard deviations (%RSD) were less than or equal to 15.0% for each individual compound and less than or equal to 30.0% for calibration check compounds (CCCs).

Date	Compound	%RSD	Associated Samples	Flag	A or P
12/6/13	Bromomethane n-Hexane Naphthalene	26.10564 15.69199 30.93799	All samples in SDG A134908	J (all detects) UJ (all non-detects)	A

In the case where the laboratory used a calibration curve to evaluate the compounds, all coefficients of determination ( $r^2$ ) were greater than or equal to 0.990 .

Average relative response factors (RRF) for all compounds were within method and validation criteria.

## IV. Continuing Calibration

Continuing calibration was performed at the required frequencies.

Percent differences (%D) between the initial calibration RRF and the continuing calibration RRF were within the method criteria of less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
12/9/13 (A3L0901-CCV2)	n-Butylbenzene tert-Butylbenzene n-Propylbenzene 1,3,5-Trimethylbenzene 1,2,4-Trimethylbenzene	30.6 25.3 27.9 23.6 23.2	WS-SB-GP-1 (18-20')** WS-SB-GP-2 (14-16') WS-SB-GP-2 (18-20') WS-SB-GP-3 (4-6') WS-SB-GP-7 (2-4')	J (all detects) UJ (all non-detects)	A

Date	Compound	%D	Associated Samples	Flag	A or P
12/9/13 (A3L0901-CCV2)	sec-Butylbenzene 2-Chlorotoluene 4-Chlorotoluene 1,3-Dichlorobenzene 1,1-Dichloroethane Hexachlorobutadiene p-Isopropyltoluene 1,1,2-Trichloroethane Trichlorofluoromethane 1,1,2-Trichlorotrifluoroethane	24.5 25.0 21.6 22.7 20.6 33.9 27.5 21.2 76.4 22.8	WS-SB-GP-1 (18-20')** WS-SB-GP-2 (14-16') WS-SB-GP-2 (18-20') WS-SB-GP-3 (4-6') WS-SB-GP-4 (4-6') WS-SB-GP-5 (2-4')** WS-SB-GP-7 (2-4')	J (all detects) UJ (all non-detects)	A
12/10/13 (A3L001-CCV1)	Trichlorofluoromethane	43.8	WS-SB-GP-6 (0-2') Duplicate 1 WS-SB-GP-8 (2-4') WS-SB-GP-7 (8-9') WS-SB-GP-8 (8-10')	J (all detects) UJ (all non-detects)	A
12/10/13 (A3L001-CCV2)	Acetone Benzene Bromobenzene 2-Butanone n-Butylbenzene sec-Butylbenzene tert-Butylbenzene Chloroform 2-Chlorotoluene 4-Chlorotoluene 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,3-Dichlorobenzene 1,1-Dichloroethane 1,2-Dichloroethane trans-1,2-Dichloroethene cis-1,2-Dichloroethene 1,1-Dichloropropene Di-isopropyl ether Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Methylene chloride Methyl-tert-butyl ether Styrene 1,1,2,2-Tetrachloroethane Tetrahydrofuran 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane Trichlorofluoromethane 1,1,2-Trichlorotrifluoroethane 1,3,5-Trimethylbenzene m,p-Xylenes o-Xylene	25.5 22.5 22.4 23.3 30.3 28.6 30.2 23.2 26.0 25.9 23.1 23.8 21.4 26.8 22.2 20.6 23.6 21.5 31.3 26.7 24.0 29.9 21.6 22.1 23.5 20.7 21.9 20.8 24.2 24.4 63.5 25.0 30.1 21.2 20.5	WS-SB-GP-9 (8-10') WS-SB-GP-10 (8-10') WS-SB-GP-12 (6-8') WS-SB-GP-12 (12-15') WS-SB-GP-13 (6-8')** WS-SB-GP-13 (13-15') Duplicate 2 WS-SB-GP-14 (6-8') WS-SB-GP-14 (12-15')	J (all detects) UJ (all non-detects)	A
12/10/13 (A3L001-CCV2)	Ethylbenzene	21.9	WS-SB-GP-9 (8-10') WS-SB-GP-10 (8-10') WS-SB-GP-12 (6-8') WS-SB-GP-12 (12-15') WS-SB-GP-13 (6-8')** WS-SB-GP-13 (13-15') WS-SB-GP-14 (6-8') WS-SB-GP-14 (12-15')	J (all detects) UJ (all non-detects)	A

Date	Compound	%D	Associated Samples	Flag	A or P
12/10/13 (A3L001-CCV2)	n-Propylbenzene	29.1	WS-SB-GP-9 (8-10') WS-SB-GP-10 (8-10') WS-SB-GP-12 (6-8') WS-SB-GP-12 (12-15') WS-SB-GP-13 (6-8')** Duplicate 2 WS-SB-GP-14 (6-8') WS-SB-GP-14 (12-15')	J (all detects) UJ (all non-detects)	A
12/10/13 (A3L001-CCV2)	1,2,4-Trimethylbenzene	28.3	WS-SB-GP-9 (8-10') WS-SB-GP-10 (8-10') WS-SB-GP-12 (6-8') WS-SB-GP-12 (12-15') WS-SB-GP-13 (6-8')** WS-SB-GP-14 (6-8') WS-SB-GP-14 (12-15')	J (all detects) UJ (all non-detects)	A
12/10/13 (A3L001-CCV3)	Acetone Benzene n-Butylbenzene sec-Butylbenzene tert-Butylbenzene Chloroethane Chloroform 2-Chlorotoluene 1,1-Dichloroethane cis-1,2-Dichloroethene Di-isopropyl ether Hexachlorobutadiene Isopropylbenzene Naphthalene n-Propylbenzene 1,1,1-Trichloroethane Trichlorofluoromethane 1,1,2-Trichlorotrifluoroethane 1,3,5-Trimethylbenzene	21.3 22.4 33.2 22.3 21.2 31.8 22.9 39.6 22.2 20.8 22.3 20.6 23.6 20.7 39.2 20.8 57.1 21.9 51.9	MeOH Blank	J (all detects) UJ (all non-detects)	A
12/10/13 (A3L001-CCV3)	Ethylbenzene	43.9	WS-SB-GP-5 (2-4')** MeOH Blank	J (all detects) UJ (all non-detects)	A
12/10/13 (A3L001-CCV3)	Toluene 1,2,4-Trimethylbenzene	70.0 130	WS-SB-GP-4 (4-6') WS-SB-GP-5 (2-4')** WS-SB-GP-6 (0-2') Duplicate 1 MeOH Blank	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A
12/10/13 (A3L001-CCV3)	m,p-Xylenes	81.0	WS-SB-GP-4 (4-6') WS-SB-GP-5 (2-4')** WS-SB-GP-6 (0-2') MeOH Blank	J (all detects) UJ (all non-detects)	A
12/10/13 (A3L001-CCV3)	o-Xylene	51.7	WS-SB-GP-4 (4-6') WS-SB-GP-5 (2-4')** MeOH Blank	J (all detects) UJ (all non-detects)	A

The percent differences (%D) of the second source calibration standard were less than or equal to 20.0% for all compounds with the following exceptions:

Date	Compound	%D	Associated Samples	Flag	A or P
12/9/13 (A3L0604-SCV1)	Methyl-tert-butyl ether Acetone 2-Butanone Bromoform	21.4 22.9 23.6 25.0	All samples in SDG A134908	J (all detects) UJ (all non-detects)	A

All of the continuing calibration relative response factors (RRF) were within method and validation criteria.

## V. Blanks

Method blanks were reviewed for each matrix as applicable. No volatile contaminants were found in the method blanks with the following exceptions:

Method Blank ID	Analysis Date	Compound TIC (RT in minutes)	Concentration	Associated Samples
A312036_BLK1	12/9/13	Naphthalene m,p-Xylenes o-Xylene	13 ug/Kg 4.5 ug/Kg 5.0 ug/Kg	WS-SB-GP-1 (6-8') WS-SB-GP-1 (18-20')** WS-SB-GP-2 (14-16') WS-SB-GP-2 (18-20') WS-SB-GP-3 (4-6') WS-SB-GP-4 (4-6') WS-SB-GP-5 (2-4')** WS-SB-GP-6 (0-2') Duplicate 1 WS-SB-GP-7 (2-4') WS-SB-GP-8 (2-4') WS-SB-GP-7 (8-9') WS-SB-GP-8 (8-10') WS-SB-GP-9 (8-10') WS-SB-GP-10 (8-10')
A312037-BLK1	12/9/13	Dichlorodifluoromethane Naphthalene o-Xylene	6.0 ug/Kg 9.0 ug/Kg 5.0 ug/Kg	WS-SB-GP-11 (8-10') WS-SB-GP-12 (6-8') WS-SB-GP-12 (12-15') WS-SB-GP-13 (6-8')** WS-SB-GP-13 (13-15') Duplicate 2 WS-SB-GP-14 (6-8') WS-SB-GP-14 (12-15') MeOH Blank

Sample concentrations were compared to concentrations detected in the method blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated method blanks with the following exceptions:

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
WS-SB-GP-2 (18-20')	Naphthalene m,p-Xylenes o-Xylene	8.9 ug/Kg 22 ug/Kg 13 ug/Kg	8.9U ug/Kg 22U ug/Kg 13U ug/Kg

Sample	Compound TIC (RT in minutes)	Reported Concentration	Modified Final Concentration
WS-SB-GP-7 (8-9')	m,p-Xylenes o-Xylene	18 ug/Kg 10 ug/Kg	18U ug/Kg 10U ug/Kg
WS-SB-GP-9 (8-10')	m,p-Xylenes o-Xylene	5.9 ug/Kg 5.9 ug/Kg	5.9U ug/Kg 5.9U ug/Kg
WS-SB-GP-10 (8-10')	m,p-Xylenes o-Xylene	6.3 ug/Kg 5.8 ug/Kg	6.3U ug/Kg 5.8U ug/Kg
WS-SB-GP-11 (8-10')	o-Xylene	6.7 ug/Kg	6.7U ug/Kg
WS-SB-GP-12 (6-8')	o-Xylene	8.6 ug/Kg	8.6U ug/Kg
WS-SB-GP-12 (12-15')	o-Xylene	18 ug/Kg	18U ug/Kg
WS-SB-GP-13 (6-8')**	o-Xylene	8.8 ug/Kg	8.8U ug/Kg
Duplicate 2	Dichlorodifluoromethane	7.0 ug/Kg	7.0U ug/Kg
WS-SB-GP-14 (6-8')	Dichlorodifluoromethane	7.0 ug/Kg	7.0U ug/Kg
WS-SB-GP-14 (12-15')	o-Xylene	25 ug/Kg	25U ug/Kg

Sample MeOH Blank was identified as a trip blank. No volatile contaminants were found.

Sample Equipment Blank (from SDG A134906) was identified as an equipment blank. No volatile contaminants were found with the following exceptions:



Blank ID	Sampling Date	Compound	Concentration	Associated Samples
Equipment Blank	12/3/13	Acetone Carbon disulfide Chloroform Toluene 1,3-Dichloropropane	5.8 ug/L 0.11 ug/L 0.42 ug/L 0.080 ug/L 0.10 ug/L	WS-SB-GP-1 (6-8') WS-SB-GP-1 (18-20')** WS-SB-GP-2 (14-16') WS-SB-GP-2 (18-20') WS-SB-GP-3 (4-6') WS-SB-GP-4 (4-6') WS-SB-GP-5 (2-4')** WS-SB-GP-6 (0-2') Duplicate 1 WS-SB-GP-7 (2-4') WS-SB-GP-8 (2-4') WS-SB-GP-7 (8-9') WS-SB-GP-8 (8-10') WS-SB-GP-9 (8-10') WS-SB-GP-10 (8-10') WS-SB-GP-11 (8-10') WS-SB-GP-12 (6-8') WS-SB-GP-12 (12-15') WS-SB-GP-13 (6-8')** WS-SB-GP-13 (13-15') Duplicate 2 WS-SB-GP-14 (6-8') WS-SB-GP-14 (12-15')

Sample concentrations were compared to concentrations detected in the field blanks. The sample concentrations were either not detected or were significantly greater (>10X for common contaminants, >5X for other contaminants) than the concentrations found in the associated field blanks.

## VI. Surrogate Spikes

Surrogates were added to all samples and blanks as required by the method. All surrogate recoveries (%R) were within QC limits with the following exceptions:

Sample	Surrogate	%R (Limits)	Compound	Flag	A or P
WS-SB-GP-4 (4-6')	Bromofluorobenzene	56.3 (90.3-110)	All TCL compounds except Benzene n-Butylbenzene tert-Butylbenzene Ethylbenzene n-Hexane Naphthalene n-Propylbenzene Toluene 1,3,5-Trimethylbenzene 1,2,4-Trimethylbenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	A

## VII. Matrix Spike/Matrix Spike Duplicates

Matrix spike (MS) and matrix spike duplicate (MSD) samples were reviewed for each matrix as applicable. Percent recoveries (%R) and relative percent differences (RPD) were within QC limits with the following exceptions:

Spike ID (Associated Samples)	Compound	MS (%R) (Limits)	MSD (%R) (Limits)	RPD (Limits)	Flag	A or P
WS-SB-GP-1 (6-8')MS/MSD (WS-SB-GP-1 (6-8'))	1,2,4-Trimethylbenzene m,p-Xylenes	123 (84.3-121) 121 (87.9-119)	- -	- -	J (all detects) J (all detects)	A
WS-SB-GP-11 (8-10')MS/MSD (WS-SB-GP-11 (8-10'))	1,3,5-Trimethylbenzene 1,2,4-Trimethylbenzene m,p-Xylenes	- - -	123 (90.4-120) 134 (84.3-121) 125 (83.3-117)	- - -	J (all detects) J (all detects) J (all detects)	A

### VIII. Laboratory Control Samples (LCS)

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

### IX. Regional Quality Assurance and Quality Control

Not applicable.

### X. Internal Standards

All internal standard areas and retention times were within QC limits with the following exceptions:

Sample	Internal Standards	Area (Limits)	Compound	Flag	A or P
WS-SB-GP-4 (4-6')	Chlorobenzene-d5	1210502 (269944-1079776)	Tetrachloroethene 1,3-Dichloropropane 2-Hexanone Dibromochloromethane Chlorobenzene 1,1,1,2-Tetrachloroethane Styrene Bromoform Isopropylbenzene	J (all detects) UJ (all non-detects)	A

### XI. Target Compound Identifications

All target compound identifications were within validation criteria for samples on which an EPA Level IV review. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

### XII. Compound Quantitation

All compound quantitations were within validation criteria for samples on which an EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

### XIII. Tentatively Identified Compounds (TICs)

Tentatively identified compounds were not reported by the laboratory.

### XIV. System Performance

The system performance was acceptable for samples on which an EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

### XV. Overall Assessment of Data

Data flags are summarized at the end of this report if data has been qualified.

### XVI. Field Duplicates

Samples WS-SB-GP-6 (0-2') and Duplicate 1 and samples WS-SB-GP-13 (13-15') and Duplicate 2 were identified as field duplicates. No volatiles were detected in any of the samples with the following exceptions:

Compound	Concentration (ug/Kg)		RPD (Limits)
	WS-SB-GP-6 (0-2')	Duplicate 1	
Benzene	18000	13000	32 (≤50)
n-Butylbenzene	64U	15000	NC
sec-Butylbenzene	48U	2700	NC
tert-Butylbenzene	54U	23000	NC
Ethylbenzene	80000	61000	27 (≤50)
n-Hexane	47000	31000	41 (≤50)
Isopropylbenzene	6700	5400	21 (≤50)
p-Isopropyltoluene	1200	54U	NC
Naphthalene	36000	36000	0 (≤50)
n-Propylbenzene	32000	25000	25 (≤50)
Toluene	220000	210000	5 (≤50)
1,3,5-Trimethylbenzene	60000	47000	24 (≤50)

Compound	Concentration (ug/Kg)		RPD (Limits)
	WS-SB-GP-6 (0-2')	Duplicate 1	
1,2,4-Trimethylbenzene	210000	170000	21 (≤50)
m,p-Xylenes	320000	240000	29 (≤50)
o-Xylene	120000	88000	31 (≤50)

Compound	Concentration (ug/Kg)		RPD (Limits)
	WS-SB-GP-13 (13-15')	Duplicate 2	
Benzene	30	98	NC
n-Butylbenzene	1000	180	139 (≤50)
sec-Butylbenzene	390	95	NC
tert-Butylbenzene	1100	940	16 (≤50)
Dichlorodifluoromethane	5.8U	7.0	NC
Ethylbenzene	280	7800	186 (≤50)
n-Hexane	120	640	NC
Isopropylbenzene	600	730	20 (≤50)
p-Isopropyltoluene	120	140	NC
Naphthalene	720	440	NC
n-Propylbenzene	2600	2300	12 (≤50)
Toluene	17	23	NC
1,3,5-Trimethylbenzene	1400	1600	13 (≤50)
1,2,4-Trimethylbenzene	7100	6400	10 (≤50)
m,p-Xylenes	670	300	76 (≤50)
o-Xylene	35	27	NC

NC = Not calculated. One or both samples were either non detected or less than 5x LOQ.

**Wedron Community Groundwater  
Volatiles - Data Qualification Summary - SDG A134908**

SDG	Sample	Compound	Flag	A or P	Reason
A134908	WS-SB-GP-1 (6-8') WS-SB-GP-1 (18-20')** WS-SB-GP-2 (14-16') WS-SB-GP-2 (18-20') WS-SB-GP-3 (4-6') WS-SB-GP-4 (4-6') WS-SB-GP-5 (2-4')** WS-SB-GP-6 (0-2') Duplicate 1 WS-SB-GP-7 (2-4') WS-SB-GP-8 (2-4') WS-SB-GP-7 (8-9') WS-SB-GP-8 (8-10') WS-SB-GP-9 (8-10') WS-SB-GP-10 (8-10') WS-SB-GP-11 (8-10') WS-SB-GP-12 (6-8') WS-SB-GP-12 (12-15') WS-SB-GP-13 (6-8')** WS-SB-GP-13 (13-15') Duplicate 2 WS-SB-GP-14 (6-8') WS-SB-GP-14 (12-15') MeOH Blank	Bromomethane n-Hexane Naphthalene	J (all detects) UJ (all non-detects)	A	Initial calibration (%RSD)
A134908	WS-SB-GP-1 (18-20')** WS-SB-GP-2 (14-16') WS-SB-GP-2 (18-20') WS-SB-GP-3 (4-6') WS-SB-GP-7 (2-4')	n-Butylbenzene tert-Butylbenzene n-Propylbenzene 1,3,5-Trimethylbenzene 1,2,4-Trimethylbenzene	J (all detects) UJ (all non-detects)	A	Continuing calibration (CCV %D)
A134908	WS-SB-GP-1 (18-20')** WS-SB-GP-2 (14-16') WS-SB-GP-2 (18-20') WS-SB-GP-3 (4-6') WS-SB-GP-4 (4-6') WS-SB-GP-5 (2-4')** WS-SB-GP-7 (2-4')	sec-Butylbenzene 2-Chlorotoluene 4-Chlorotoluene 1,3-Dichlorobenzene 1,1-Dichloroethane Hexachlorobutadiene p-Isopropyltoluene 1,1,2-Trichloroethane Trichlorofluoromethane 1,1,2-Trichlorotrifluoroethane	J (all detects) UJ (all non-detects)	A	Continuing calibration (CCV %D)
A134908	WS-SB-GP-6 (0-2') Duplicate 1 WS-SB-GP-8 (2-4') WS-SB-GP-7 (8-9') WS-SB-GP-8 (8-10')	Trichlorofluoromethane	J (all detects) UJ (all non-detects)	A	Continuing calibration (CCV %D)



SDG	Sample	Compound	Flag	A or P	Reason
A134908	WS-SB-GP-9 (8-10') WS-SB-GP-10 (8-10') WS-SB-GP-12 (6-8') WS-SB-GP-12 (12-15') WS-SB-GP-13 (6-8')** WS-SB-GP-13 (13-15') Duplicate 2 WS-SB-GP-14 (6-8') WS-SB-GP-14 (12-15')	Acetone Benzene Bromobenzene 2-Butanone n-Butylbenzene sec-Butylbenzene tert-Butylbenzene Chloroform 2-Chlorotoluene 4-Chlorotoluene 1,2-Dichlorobenzene 1,4-Dichlorobenzene 1,3-Dichlorobenzene 1,1-Dichloroethane 1,2-Dichloroethane trans-1,2-Dichloroethene cis-1,2-Dichloroethene 1,1-Dichloropropene Di-isopropyl ether Hexachlorobutadiene Isopropylbenzene p-Isopropyltoluene Methylene chloride Methyl-tert-butyl ether Styrene 1,1,2,2-Tetrachloroethane Tetrahydrofuran 1,2,3-Trichlorobenzene 1,2,4-Trichlorobenzene 1,1,1-Trichloroethane Trichlorofluoromethane 1,1,2-Trichlorotrifluoroethane 1,3,5-Trimethylbenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	A	Continuing calibration (CCV %D)
A134908	WS-SB-GP-9 (8-10') WS-SB-GP-10 (8-10') WS-SB-GP-12 (6-8') WS-SB-GP-12 (12-15') WS-SB-GP-13 (6-8')** WS-SB-GP-13 (13-15') WS-SB-GP-14 (6-8') WS-SB-GP-14 (12-15')	Ethylbenzene	J (all detects) UJ (all non-detects)	A	Continuing calibration (CCV %D)
A134908	WS-SB-GP-9 (8-10') WS-SB-GP-10 (8-10') WS-SB-GP-12 (6-8') WS-SB-GP-12 (12-15') WS-SB-GP-13 (6-8')** Duplicate 2 WS-SB-GP-14 (6-8') WS-SB-GP-14 (12-15')	n-Propylbenzene	J (all detects) UJ (all non-detects)	A	Continuing calibration (CCV %D)
A134908	WS-SB-GP-9 (8-10') WS-SB-GP-10 (8-10') WS-SB-GP-12 (6-8') WS-SB-GP-12 (12-15') WS-SB-GP-13 (6-8')** WS-SB-GP-14 (6-8') WS-SB-GP-14 (12-15')	1,2,4-Trimethylbenzene	J (all detects) UJ (all non-detects)	A	Continuing calibration (CCV %D)

SDG	Sample	Compound	Flag	A or P	Reason
A134908	MeOH Blank	Acetone Benzene n-Butylbenzene sec-Butylbenzene tert-Butylbenzene Chloroethane Chloroform 2-Chlorotoluene 1,1-Dichloroethane cis-1,2-Dichloroethene Di-isopropyl ether Hexachlorobutadiene Isopropylbenzene Naphthalene n-Propylbenzene 1,1,1-Trichloroethane Trichlorofluoromethane 1,1,2-Trichlorotrifluoroethane 1,3,5-Trimethylbenzene	J (all detects) UJ (all non-detects)	A	Continuing calibration (CCV %D)
A134908	WS-SB-GP-5 (2-4')** MeOH Blank	Ethylbenzene	J (all detects) UJ (all non-detects)	A	Continuing calibration (CCV %D)
A134908	WS-SB-GP-4 (4-6') WS-SB-GP-5 (2-4')** WS-SB-GP-6 (0-2') Duplicate 1 MeOH Blank	Toluene  1,2,4-Trimethylbenzene	J (all detects) UJ (all non-detects) J (all detects) UJ (all non-detects)	A	Continuing calibration (CCV %D)
A134908	WS-SB-GP-4 (4-6') WS-SB-GP-5 (2-4')** WS-SB-GP-6 (0-2') MeOH Blank	m,p-Xylenes	J (all detects) UJ (all non-detects)	A	Continuing calibration (CCV %D)
A134908	WS-SB-GP-4 (4-6') WS-SB-GP-5 (2-4')** MeOH Blank	o-Xylene	J (all detects) UJ (all non-detects)	A	Continuing calibration (CCV %D)
A134908	WS-SB-GP-1 (6-8') WS-SB-GP-1 (18-20')** WS-SB-GP-2 (14-16') WS-SB-GP-2 (18-20') WS-SB-GP-3 (4-6') WS-SB-GP-4 (4-6') WS-SB-GP-5 (2-4')** WS-SB-GP-6 (0-2') Duplicate 1 WS-SB-GP-7 (2-4') WS-SB-GP-8 (2-4') WS-SB-GP-7 (8-9') WS-SB-GP-8 (8-10') WS-SB-GP-9 (8-10') WS-SB-GP-10 (8-10') WS-SB-GP-11 (8-10') WS-SB-GP-12 (6-8') WS-SB-GP-12 (12-15') WS-SB-GP-13 (6-8')** WS-SB-GP-13 (13-15') Duplicate 2 WS-SB-GP-14 (6-8') WS-SB-GP-14 (12-15') MeOH Blank	Methyl-tert-butyl ether Acetone 2-Butanone Bromoform	J (all detects) UJ (all non-detects)	A	Continuing calibration (ICV %D)

SDG	Sample	Compound	Flag	A or P	Reason
A134908	WS-SB-GP-4 (4-6')	All TCL compounds except Benzene n-Butylbenzene tert-Butylbenzene Ethylbenzene n-Hexane Naphthalene n-Propylbenzene Toluene 1,3,5-Trimethylbenzene 1,2,4-Trimethylbenzene m,p-Xylenes o-Xylene	J (all detects) UJ (all non-detects)	A	Surrogate spikes (%R)
A134908	WS-SB-GP-1 (6-8')	1,2,4-Trimethylbenzene m,p-Xylenes	J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
A134908	WS-SB-GP-11 (8-10')	1,3,5-Trimethylbenzene 1,2,4-Trimethylbenzene m,p-Xylenes	J (all detects) J (all detects) J (all detects)	A	Matrix spike/Matrix spike duplicate (%R)
A134908	WS-SB-GP-4 (4-6')	Tetrachloroethene 1,3-Dichloropropane 2-Hexanone Dibromochloromethane Chlorobenzene 1,1,1,2-Tetrachloroethane Styrene Bromoform Isopropylbenzene	J (all detects) UJ (all non-detects)	A	Internal standards (area)

### Wedron Community Groundwater Volatiles - Laboratory Blank Data Qualification Summary - SDG A134908

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
A134908	WS-SB-GP-2 (18-20')	Naphthalene m,p-Xylenes o-Xylene	8.9U ug/Kg 22U ug/Kg 13U ug/Kg	A
A134908	WS-SB-GP-7 (8-9')	m,p-Xylenes o-Xylene	18U ug/Kg 10U ug/Kg	A
A134908	WS-SB-GP-9 (8-10')	m,p-Xylenes o-Xylene	5.9U ug/Kg 5.9U ug/Kg	A
A134908	WS-SB-GP-10 (8-10')	m,p-Xylenes o-Xylene	6.3U ug/Kg 5.8U ug/Kg	A
A134908	WS-SB-GP-11 (8-10')	o-Xylene	6.7U ug/Kg	A
A134908	WS-SB-GP-12 (6-8')	o-Xylene	8.6U ug/Kg	A

SDG	Sample	Compound TIC (RT in minutes)	Modified Final Concentration	A or P
A134908	WS-SB-GP-12 (12-15')	o-Xylene	18U ug/Kg	A
A134908	WS-SB-GP-13 (6-8')**	o-Xylene	8.8U ug/Kg	A
A134908	Duplicate 2	Dichlorodifluoromethane	7.0U ug/Kg	A
A134908	WS-SB-GP-14 (6-8')	Dichlorodifluoromethane	7.0U ug/Kg	A
A134908	WS-SB-GP-14 (12-15')	o-Xylene	25U ug/Kg	A

**Wedron Community Groundwater  
Volatiles - Field Blank Data Qualification Summary - SDG A134908**

No Sample Data Qualified in this SDG



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### Revised Report

GZA GeoEnvironmental, Inc.  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

### WS-SB-GP-3 (4-6')

A134908-05 (Soil)

Date Sampled  
12/03/2013 10:55

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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### ECCS

#### Volatile Organic Compounds by Method 8260 - Purge and Trap

Preparation Batch: A312036

Acetone	ND $\checkmark$	150	990	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
<b>Benzene</b>	<b>3400</b>	16	250	ug/kg dry	10	12/09/2013	12/10/2013 12:14	EPA 8260B	D
Bromobenzene	ND	5.1	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Bromochloromethane	ND	9.5	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Bromodichloromethane	ND	3.4	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Bromoform	ND $\checkmark$	15	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Bromomethane	ND $\downarrow$	250	250	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
2-Butanone	ND $\downarrow$	180	990	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
<b>n-Butyl Benzene</b>	<b>560</b> $\checkmark$	3.2	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	HC
<b>sec-Butyl Benzene</b>	<b>60</b> $\checkmark$	2.4	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
<b>tert-Butylbenzene</b>	<b>1500</b> $\checkmark$	2.7	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Carbon disulfide	ND	2.3	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Carbon tetrachloride	ND	4.1	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Chlorobenzene	ND	3.7	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Chloroethane	ND	250	250	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Chloroform	ND	3.8	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Chloromethane	ND	7.8	50	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
2-Chlorotoluene	ND $\checkmark$	2.6	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
4-Chlorotoluene	ND $\checkmark$	3.1	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,2-Dibromo-3-chloropropane	ND	11	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Dibromochloromethane	ND	5.3	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,2-Dibromoethane (EDB)	ND	4.9	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Dibromomethane	ND	11	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,2-Dichlorobenzene	ND	2.7	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,4-Dichlorobenzene	ND	4.0	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,3-Dichlorobenzene	ND $\checkmark$	4.7	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Dichlorodifluoromethane	ND	5.1	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,1-Dichloroethane	ND $\checkmark$	9.2	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,2-Dichloroethane	ND	4.6	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
trans-1,2-Dichloroethene	ND	4.5	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
cis-1,2-Dichloroethene	ND	7.9	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,1-Dichloroethene	ND	7.2	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
2,2-Dichloropropane	ND	9.9	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,2-Dichloropropane	ND	7.6	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,3-Dichloropropane	ND	4.6	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
cis-1,3-Dichloropropene	ND	5.6	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
trans-1,3-Dichloropropene	ND	4.3	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,1-Dichloropropene	ND	3.6	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Diisopropyl Ether	ND	14	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
<b>Ethylbenzene</b>	<b>6500</b>	21	250	ug/kg dry	10	12/09/2013	12/10/2013 12:14	EPA 8260B	HC, D

02/15/14





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## Revised Report

GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

### WS-SB-GP-3 (4-6')

A134908-05 (Soil)

Date Sampled  
12/03/2013 10:55

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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### ECCS

#### Volatile Organic Compounds by Method 8260 - Purge and Trap

Preparation Batch:A312036

Hexachlorobutadiene	ND $\checkmark$	6.4	99	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
n-Hexane	880 $\checkmark$	11	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
2-Hexanone	ND	29	990	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Isopropylbenzene	310	2.3	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
p-Isopropyltoluene	27 $\checkmark$	2.8	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Methylene chloride	ND	7.0	99	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
4-Methyl-2-pentanone	ND	39	990	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Methyl t-Butyl Ether	ND $\checkmark$	4.3	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Naphthalene	2800 $\checkmark$	38	2500	ug/kg dry	10	12/09/2013	12/10/2013 12:14	EPA 8260B	D
n-Propyl Benzene	1300 $\checkmark$	3.4	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Styrene	ND	4.0	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,1,1,2-Tetrachloroethane	ND	7.6	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	6.0	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Tetrachloroethene	ND	5.7	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Tetrahydrofuran	ND	110	500	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Toluene	17000	40	250	ug/kg dry	10	12/09/2013	12/10/2013 12:14	EPA 8260B	D
1,2,3-Trichlorobenzene	ND	5.5	99	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,2,4-Trichlorobenzene	ND	6.4	99	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,1,1-Trichloroethane	ND	7.2	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,1,2-Trichloroethane	ND $\checkmark$	6.3	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Trichloroethene	ND	4.1	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
Trichlorofluoromethane	ND $\checkmark$	5.4	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,2,3-Trichloropropane	ND	6.5	50	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,1,2-Trichlorotrifluoroethane	ND $\checkmark$	4.1	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
1,3,5-Trimethylbenzene	2700 $\checkmark$	24	250	ug/kg dry	10	12/09/2013	12/10/2013 12:14	EPA 8260B	D
1,2,4-Trimethylbenzene	9800 $\checkmark$	35	250	ug/kg dry	10	12/09/2013	12/10/2013 12:14	EPA 8260B	D
Vinyl chloride	ND	5.8	25	ug/kg dry	1	12/09/2013	12/10/2013 00:34	EPA 8260B	
m,p-Xylene	28000	31	500	ug/kg dry	10	12/09/2013	12/10/2013 12:14	EPA 8260B	D
o-Xylene	11000	30	250	ug/kg dry	10	12/09/2013	12/10/2013 12:14	EPA 8260B	D
Surrogate: Dibromofluoromethane			103 %	80.4-125		12/09/2013	12/10/2013 00:34	EPA 8260B	
Surrogate: Toluene-d8			95.1 %	94.1-107		12/09/2013	12/10/2013 00:34	EPA 8260B	
Surrogate: 4-Bromofluorobenzene			97.6 %	90.3-110		12/09/2013	12/10/2013 00:34	EPA 8260B	

#### Classical Chemistry Parameters

Preparation Batch:A312025

% Solids	89.6	0.00	% by Weight	1	12/05/2013	12/06/2013 08:53	SM 2540B
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### Pace Analytical

ASTM D2974-87

Preparation Batch:WET 17181

02/15/14



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### Revised Report

GZA GeoEnvironmental, Inc.  
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Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

### WS-SB-GP-4 (4-6')

A134908-06 (Soil)

Date Sampled  
12/03/2013 11:25

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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### ECCS

#### Volatile Organic Compounds by Method 8260 - Purge and Trap

Preparation Batch: A312036

Acetone	ND	5	160	1100	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Benzene	3800	5	17	270	ug/kg dry	10	12/09/2013	12/10/2013 12:42	EPA 8260B	D
Bromobenzene	ND	5	5.5	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Bromochloromethane	ND	↓	10	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Bromodichloromethane	ND	↓	3.7	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Bromoform	ND	5	16	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Bromomethane	ND	↓	270	270	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
2-Butanone	ND	↓	200	1100	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
n-Butyl Benzene	4500	5	35	270	ug/kg dry	10	12/09/2013	12/10/2013 12:42	EPA 8260B	D
sec-Butyl Benzene	56	5	2.6	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
tert-Butylbenzene	8600	5	29	270	ug/kg dry	10	12/09/2013	12/10/2013 12:42	EPA 8260B	D
Carbon disulfide	ND	5	2.5	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Carbon tetrachloride	ND	↓	4.4	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Chlorobenzene	ND	↓	4.0	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Chloroethane	ND	↓	270	270	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Chloroform	ND	↓	4.1	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Chloromethane	ND	↓	8.6	54	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
2-Chlorotoluene	ND	5	2.8	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
4-Chlorotoluene	ND	5	3.4	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,2-Dibromo-3-chloropropane	ND	5	12	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Dibromochloromethane	ND	↓	5.7	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,2-Dibromoethane (EDB)	ND	↓	5.3	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Dibromomethane	ND	↓	12	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,2-Dichlorobenzene	ND	↓	2.9	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,4-Dichlorobenzene	ND	↓	4.3	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,3-Dichlorobenzene	ND	5	5.1	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Dichlorodifluoromethane	6.5	5	5.5	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	B, J
1,1-Dichloroethane	ND	5	10	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,2-Dichloroethane	ND	5	5.0	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
trans-1,2-Dichloroethene	ND	↓	4.9	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
cis-1,2-Dichloroethene	ND	↓	8.7	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,1-Dichloroethene	ND	↓	7.9	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
2,2-Dichloropropane	ND	↓	11	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,2-Dichloropropane	ND	↓	8.4	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,3-Dichloropropane	ND	↓	5.0	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
cis-1,3-Dichloropropene	ND	↓	6.1	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
trans-1,3-Dichloropropene	ND	↓	4.7	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,1-Dichloropropene	ND	↓	3.9	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Diisopropyl Ether	ND	↓	15	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Ethylbenzene	22000	5	23	270	ug/kg dry	10	12/09/2013	12/10/2013 12:42	EPA 8260B	HC, D

22/15/14



2525 Advance Road  
Madison, WI 53718  
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### Revised Report

GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

### WS-SB-GP-4 (4-6')

A134908-06 (Soil)

Date Sampled  
12/03/2013 11:25

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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### ECCS

#### Volatile Organic Compounds by Method 8260 - Purge and Trap

Preparation Batch: A312036

Hexachlorobutadiene	ND	5	6.9	110	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
n-Hexane	3300	5	120	270	ug/kg dry	10	12/09/2013	12/10/2013 12:42	EPA 8260B	D
2-Hexanone	ND	5	31	1100	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Isopropylbenzene	860	5	2.5	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
p-Isopropyltoluene	960	5	3.0	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Methylene chloride	ND	5	7.6	110	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
4-Methyl-2-pentanone	ND	5	42	1100	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Methyl t-Butyl Ether	ND	5	4.7	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Naphthalene	18000	5	41	2700	ug/kg dry	10	12/09/2013	12/10/2013 12:42	EPA 8260B	D
n-Propyl Benzene	7300	5	37	270	ug/kg dry	10	12/09/2013	12/10/2013 12:42	EPA 8260B	D
Styrene	ND	5	4.3	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,1,1,2-Tetrachloroethane	ND	5	8.4	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	5	6.5	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Tetrachloroethene	ND	5	6.2	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Tetrahydrofuran	ND	5	120	540	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Toluene	43000	5	220	1400	ug/kg dry	50	12/09/2013	12/10/2013 23:59	EPA 8260B	HC, D
1,2,3-Trichlorobenzene	ND	5	6.0	110	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,2,4-Trichlorobenzene	ND	5	6.9	110	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,1,1-Trichloroethane	ND	5	7.9	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,1,2-Trichloroethane	ND	5	6.8	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Trichloroethene	ND	5	4.4	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
Trichlorofluoromethane	ND	5	5.9	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,2,3-Trichloropropane	ND	5	7.1	54	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,1,2-Trichlorotrifluoroethane	ND	5	4.4	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
1,3,5-Trimethylbenzene	18000	5	26	270	ug/kg dry	10	12/09/2013	12/10/2013 12:42	EPA 8260B	D
1,2,4-Trimethylbenzene	61000	5	190	1400	ug/kg dry	50	12/09/2013	12/10/2013 23:59	EPA 8260B	HC, D
Vinyl chloride	ND	5	6.3	27	ug/kg dry	1	12/09/2013	12/10/2013 01:02	EPA 8260B	
m,p-Xylene	110000	5	170	2700	ug/kg dry	50	12/09/2013	12/10/2013 23:59	EPA 8260B	HC, D
o-Xylene	41000	5	160	1400	ug/kg dry	50	12/09/2013	12/10/2013 23:59	EPA 8260B	HC, D
Surrogate: Dibromofluoromethane			95.8 %	80.4-125			12/09/2013	12/10/2013 01:02	EPA 8260B	
Surrogate: Toluene-d8			95.5 %	94.1-107			12/09/2013	12/10/2013 01:02	EPA 8260B	
Surrogate: 4-Bromofluorobenzene			56.3 %	90.3-110			12/09/2013	12/10/2013 01:02	EPA 8260B	S

#### Classical Chemistry Parameters

Preparation Batch: A312025

% Solids	86.0	0.00	% by Weight	1	12/05/2013	12/06/2013 08:53	SM 2540B
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### Pace Analytical

ASTM D2974-87

Preparation Batch: PMST 9272

02/15/14



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# Revised Report

GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

## WS-SB-GP-5 (2-4')

A134908-07 (Soil)

Date Sampled  
12/03/2013 11:59

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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## ECCS

### Volatile Organic Compounds by Method 8260 - Purge and Trap

Preparation Batch:A312036

Acetone	ND	150	1000	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
<b>Benzene</b>	<b>8200</b>	16	250	ug/kg dry	10	12/09/2013	12/10/2013 13:10	EPA 8260B	D
Bromobenzene	ND	5.1	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Bromochloromethane	ND	9.7	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Bromodichloromethane	ND	3.4	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Bromoform	ND	15	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Bromomethane	ND	250	250	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
2-Butanone	ND	180	1000	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
<b>n-Butyl Benzene</b>	<b>8500</b>	32	250	ug/kg dry	10	12/09/2013	12/10/2013 13:10	EPA 8260B	D
<b>sec-Butyl Benzene</b>	<b>95</b>	2.4	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
<b>tert-Butylbenzene</b>	<b>4700</b>	2.7	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	E
Carbon disulfide	ND	2.3	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Carbon tetrachloride	ND	4.1	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Chlorobenzene	ND	3.7	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Chloroethane	ND	250	250	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Chloroform	ND	3.8	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Chloromethane	ND	8.0	50	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
2-Chlorotoluene	ND	2.6	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
4-Chlorotoluene	ND	3.1	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,2-Dibromo-3-chloropropane	ND	11	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Dibromochloromethane	ND	5.3	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,2-Dibromoethane (EDB)	ND	4.9	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Dibromomethane	ND	11	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,2-Dichlorobenzene	ND	2.7	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,4-Dichlorobenzene	ND	4.0	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,3-Dichlorobenzene	ND	4.7	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
<b>Dichlorodifluoromethane</b>	<b>6.0</b>	5.1	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	B, J
1,1-Dichloroethane	ND	9.4	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,2-Dichloroethane	ND	4.6	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
trans-1,2-Dichloroethene	ND	4.5	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
cis-1,2-Dichloroethene	ND	8.1	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,1-Dichloroethene	ND	7.4	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
2,2-Dichloropropane	ND	10	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,2-Dichloropropane	ND	7.8	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,3-Dichloropropane	ND	4.6	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
cis-1,3-Dichloropropene	ND	5.6	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
trans-1,3-Dichloropropene	ND	4.3	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,1-Dichloropropene	ND	3.6	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Diisopropyl Ether	ND	14	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
<b>Ethylbenzene</b>	<b>28000</b>	110	1300	ug/kg dry	50	12/09/2013	12/11/2013 00:27	EPA 8260B	HC, D

02/11/14



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## Revised Report

GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

WS-SB-GP-5 (2-4')

A134908-07 (Soil)

Date Sampled  
12/03/2013 11:59

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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### ECCS

#### Volatile Organic Compounds by Method 8260 - Purge and Trap

Preparation Batch:A312036

Hexachlorobutadiene	ND	5	6.4	100	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
n-Hexane	10000	5	110	250	ug/kg dry	10	12/09/2013	12/10/2013 13:10	EPA 8260B	D
2-Hexanone	ND		29	1000	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Isopropylbenzene	2200		2.3	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
p-Isopropyltoluene	2000	5	2.8	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Methylene chloride	ND		7.1	100	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
4-Methyl-2-pentanone	ND		39	1000	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Methyl t-Butyl Ether	ND	5	4.3	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Naphthalene	18000	5	38	2500	ug/kg dry	10	12/09/2013	12/10/2013 13:10	EPA 8260B	D
n-Propyl Benzene	11000		34	250	ug/kg dry	10	12/09/2013	12/10/2013 13:10	EPA 8260B	D
Styrene	ND		4.0	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,1,1,2-Tetrachloroethane	ND		7.8	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND		6.0	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Tetrachloroethene	ND		5.7	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Tetrahydrofuran	ND		110	500	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Toluene	54000	5	200	1300	ug/kg dry	50	12/09/2013	12/11/2013 00:27	EPA 8260B	HC, D
1,2,3-Trichlorobenzene	ND		5.5	100	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,2,4-Trichlorobenzene	ND		6.4	100	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,1,1-Trichloroethane	ND		7.4	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,1,2-Trichloroethane	ND	5	6.3	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Trichloroethene	ND		4.1	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
Trichlorofluoromethane	ND	5	5.4	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,2,3-Trichloropropane	ND		6.6	50	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,1,2-Trichlorotrifluoroethane	ND	5	4.1	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
1,3,5-Trimethylbenzene	24000		24	250	ug/kg dry	10	12/09/2013	12/10/2013 13:10	EPA 8260B	D
1,2,4-Trimethylbenzene	81000	5	180	1300	ug/kg dry	50	12/09/2013	12/11/2013 00:27	EPA 8260B	HC, D
Vinyl chloride	ND		5.8	25	ug/kg dry	1	12/09/2013	12/10/2013 01:30	EPA 8260B	
m,p-Xylene	120000	5	160	2500	ug/kg dry	50	12/09/2013	12/11/2013 00:27	EPA 8260B	HC, D
o-Xylene	45000	5	150	1300	ug/kg dry	50	12/09/2013	12/11/2013 00:27	EPA 8260B	HC, D
Surrogate: Dibromofluoromethane				97.6 %	80.4-125		12/09/2013	12/10/2013 01:30	EPA 8260B	
Surrogate: Toluene-d8				95.8 %	94.1-107		12/09/2013	12/10/2013 01:30	EPA 8260B	
Surrogate: 4-Bromofluorobenzene				102 %	90.3-110		12/09/2013	12/10/2013 01:30	EPA 8260B	

#### Classical Chemistry Parameters

Preparation Batch:A312025

% Solids	84.5		0.00	% by Weight	1	12/05/2013	12/06/2013 08:53	SM 2540B	
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Pace Analytical

ASTM D2974-87

Preparation Batch:WET 17181

02-11-14





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# Revised Report

GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

## WS-SB-GP-6 (0-2')

A134908-08 (Soil)

Date Sampled  
12/03/2013 12:26

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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## ECCS

### Volatile Organic Compounds by Method 8260 - Purge and Trap

Preparation Batch:A312036

Acetone	ND <sup>5</sup>	3000	20000	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
<b>Benzene</b>	<b>18000</b>	32	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	D
Bromobenzene	ND	100	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Bromochloromethane	ND	190	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Bromodichloromethane	ND	68	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Bromoform	ND <sup>5</sup>	300	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Bromomethane	ND ↓	5000	5000	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
2-Butanone	ND ↓	3600	20000	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
n-Butyl Benzene	ND	64	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
sec-Butyl Benzene	ND	48	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
tert-Butylbenzene	ND	54	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Carbon disulfide	ND	46	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Carbon tetrachloride	ND	82	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Chlorobenzene	ND	74	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Chloroethane	ND	5000	5000	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Chloroform	ND	76	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Chloromethane	ND	160	1000	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
2-Chlorotoluene	ND	52	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
4-Chlorotoluene	ND	62	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,2-Dibromo-3-chloropropane	ND	220	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Dibromochloromethane	ND	110	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,2-Dibromoethane (EDB)	ND	98	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Dibromomethane	ND	220	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,2-Dichlorobenzene	ND	54	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,4-Dichlorobenzene	ND	80	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,3-Dichlorobenzene	ND	94	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Dichlorodifluoromethane	ND	100	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,1-Dichloroethane	ND	190	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,2-Dichloroethane	ND	92	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
trans-1,2-Dichloroethene	ND	90	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
cis-1,2-Dichloroethene	ND	160	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,1-Dichloroethene	ND	150	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
2,2-Dichloropropane	ND	200	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,2-Dichloropropane	ND	150	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,3-Dichloropropane	ND	92	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
cis-1,3-Dichloropropene	ND	110	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
trans-1,3-Dichloropropene	ND	86	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,1-Dichloropropene	ND	72	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Diisopropyl Ether	ND	280	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
<b>Ethylbenzene</b>	<b>80000</b>	110	1300	ug/kg dry	50	12/09/2013	12/10/2013 14:07	EPA 8260B	HC, D

12/15/14



2525 Advance Road  
Madison, WI 53718  
608.221.8700 Phone  
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# Revised Report

GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

## WS-SB-GP-6 (0-2')

A134908-08 (Soil)

Date Sampled  
12/03/2013 12:26

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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## ECCS

### Volatile Organic Compounds by Method 8260 - Purge and Trap

Preparation Batch:A312036

Hexachlorobutadiene	ND	130	2000	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
<b>n-Hexane</b>	47000 J	550	1300	ug/kg dry	50	12/09/2013	12/10/2013 14:07	EPA 8260B	D
2-Hexanone	ND	580	20000	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
<b>Isopropylbenzene</b>	6700	46	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	D
<b>p-Isopropyltoluene</b>	1200	56	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	D
Methylene chloride	ND	140	2000	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
4-Methyl-2-pentanone	ND	780	20000	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Methyl t-Butyl Ether	ND J	86	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
<b>Naphthalene</b>	36000 J	76	5000	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	D
<b>n-Propyl Benzene</b>	32000	68	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	D
Styrene	ND	80	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,1,1,2-Tetrachloroethane	ND	150	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	120	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Tetrachloroethene	ND	110	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Tetrahydrofuran	ND	2200	10000	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
<b>Toluene</b>	220000 J	400	2500	ug/kg dry	100	12/09/2013	12/11/2013 00:55	EPA 8260B	HC, D
1,2,3-Trichlorobenzene	ND	110	2000	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,2,4-Trichlorobenzene	ND	130	2000	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,1,1-Trichloroethane	ND	150	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,1,2-Trichloroethane	ND	130	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Trichloroethene	ND	82	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
Trichlorofluoromethane	ND J	110	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,2,3-Trichloropropane	ND	130	1000	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
1,1,2-Trichlorotrifluoroethane	ND	82	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
<b>1,3,5-Trimethylbenzene</b>	60000	120	1300	ug/kg dry	50	12/09/2013	12/10/2013 14:07	EPA 8260B	D
<b>1,2,4-Trimethylbenzene</b>	210000 J	350	2500	ug/kg dry	100	12/09/2013	12/11/2013 00:55	EPA 8260B	HC, D
Vinyl chloride	ND	120	500	ug/kg dry	20	12/09/2013	12/10/2013 13:39	EPA 8260B	
<b>m,p-Xylene</b>	320000 J	310	5000	ug/kg dry	100	12/09/2013	12/11/2013 00:55	EPA 8260B	HC, D
<b>o-Xylene</b>	120000	150	1300	ug/kg dry	50	12/09/2013	12/10/2013 14:07	EPA 8260B	D
Surrogate: Dibromofluoromethane			96.4 %	80.4-125		12/09/2013	12/10/2013 13:39	EPA 8260B	
Surrogate: Toluene-d8			98.6 %	94.1-107		12/09/2013	12/10/2013 13:39	EPA 8260B	
Surrogate: 4-Bromofluorobenzene			101 %	90.3-110		12/09/2013	12/10/2013 13:39	EPA 8260B	

### Classical Chemistry Parameters

Preparation Batch:A312025

% Solids	84.9	0.00	% by Weight	1	12/05/2013	12/06/2013 08:53	SM 2540B
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## Pace Analytical

ASTM D2974-87

Preparation Batch:PMST 9272

02/15/14



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### Revised Report

GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

### Duplicate 1

A134908-09 (Soil)

Date Sampled  
12/03/2013 12:30

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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### ECCS

#### Volatile Organic Compounds by Method 8260 - Purge and Trap

Preparation Batch:A312036

Acetone	ND	5	2900	19000	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
<b>Benzene</b>	<b>13000</b>		31	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	D
Bromobenzene	ND		98	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Bromochloromethane	ND		180	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Bromodichloromethane	ND		65	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Bromoform	ND	5	290	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Bromomethane	ND	↓	4800	4800	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
2-Butanone	ND	↓	3400	19000	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
<b>n-Butyl Benzene</b>	<b>15000</b>		61	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	D
<b>sec-Butyl Benzene</b>	<b>2700</b>		46	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	D
<b>tert-Butylbenzene</b>	<b>23000</b>		52	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	D
Carbon disulfide	ND		44	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Carbon tetrachloride	ND		78	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Chlorobenzene	ND		71	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Chloroethane	ND		4800	4800	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Chloroform	ND		73	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Chloromethane	ND		150	960	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
2-Chlorotoluene	ND		50	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
4-Chlorotoluene	ND		59	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,2-Dibromo-3-chloropropane	ND		210	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Dibromochloromethane	ND		100	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,2-Dibromoethane (EDB)	ND		94	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Dibromomethane	ND		210	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,2-Dichlorobenzene	ND		52	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,4-Dichlorobenzene	ND		77	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,3-Dichlorobenzene	ND		90	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Dichlorodifluoromethane	ND		98	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,1-Dichloroethane	ND		180	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,2-Dichloroethane	ND		88	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
trans-1,2-Dichloroethene	ND		86	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
cis-1,2-Dichloroethene	ND		150	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,1-Dichloroethene	ND		140	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
2,2-Dichloropropane	ND		190	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,2-Dichloropropane	ND		150	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,3-Dichloropropane	ND		88	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
cis-1,3-Dichloropropene	ND		110	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
trans-1,3-Dichloropropene	ND		82	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,1-Dichloropropene	ND		69	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Diisopropyl Ether	ND		270	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
<b>Ethylbenzene</b>	<b>61000</b>		100	1200	ug/kg dry	50	12/09/2013	12/10/2013 15:04	EPA 8260B	HC, D

AP-1/15/14



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### Revised Report

GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

### Duplicate 1

A134908-09 (Soil)

Date Sampled  
12/03/2013 12:30

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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### ECCS

#### Volatile Organic Compounds by Method 8260 - Purge and Trap

Preparation Batch:A312036

Hexachlorobutadiene	ND	120	1900	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
<b>n-Hexane</b>	<b>31000</b>	<b>5</b> 210	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	D
2-Hexanone	ND	560	19000	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
<b>Isopropylbenzene</b>	<b>5400</b>	44	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	D
p-Isopropyltoluene	ND	54	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Methylene chloride	ND	130	1900	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
4-Methyl-2-pentanone	ND	750	19000	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Methyl t-Butyl Ether	ND	<b>5</b> 82	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
<b>Naphthalene</b>	<b>36000</b>	<b>5</b> 73	4800	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	D
<b>n-Propyl Benzene</b>	<b>25000</b>	65	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	D
Styrene	ND	77	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,1,1,2-Tetrachloroethane	ND	150	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	110	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Tetrachloroethene	ND	110	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Tetrahydrofuran	ND	2100	9600	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
<b>Toluene</b>	<b>210000</b>	<b>5</b> 380	2400	ug/kg dry	100	12/09/2013	12/11/2013 01:23	EPA 8260B	HC, D
1,2,3-Trichlorobenzene	ND	110	1900	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,2,4-Trichlorobenzene	ND	120	1900	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,1,1-Trichloroethane	ND	140	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,1,2-Trichloroethane	ND	120	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Trichloroethene	ND	78	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
Trichlorofluoromethane	ND	<b>5</b> 100	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
1,2,3-Trichloropropane	ND	120	960	ug/kg dry	20	12/09/2013	12/10/2013 02:25	EPA 8260B	
1,1,2-Trichlorotrifluoroethane	ND	78	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
<b>1,3,5-Trimethylbenzene</b>	<b>47000</b>	110	1200	ug/kg dry	50	12/09/2013	12/10/2013 15:04	EPA 8260B	D
<b>1,2,4-Trimethylbenzene</b>	<b>170000</b>	<b>5</b> 330	2400	ug/kg dry	100	12/09/2013	12/11/2013 01:23	EPA 8260B	HC, D
Vinyl chloride	ND	110	480	ug/kg dry	20	12/09/2013	12/10/2013 14:35	EPA 8260B	
<b>m,p-Xylene</b>	<b>240000</b>	150	2400	ug/kg dry	50	12/09/2013	12/10/2013 15:04	EPA 8260B	D
<b>o-Xylene</b>	<b>88000</b>	140	1200	ug/kg dry	50	12/09/2013	12/10/2013 15:04	EPA 8260B	D

Surrogate: Dibromofluoromethane

98.4 % 80.4-125

12/09/2013 12/10/2013 14:35

EPA 8260B

Surrogate: Toluene-d8

97.8 % 94.1-107

12/09/2013 12/10/2013 14:35

EPA 8260B

Surrogate: 4-Bromofluorobenzene

102 % 90.3-110

12/09/2013 12/10/2013 14:35

EPA 8260B

#### Classical Chemistry Parameters

Preparation Batch:A312025

% Solids	90.7	0.00	% by Weight	1	12/05/2013	12/06/2013 08:53	SM 2540B
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### Pace Analytical

ASTM D2974-87

Preparation Batch:PMST 9272

12/15/14



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# Revised Report

GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

## MeOH Blank

A134908-24 (Soil)

Date Sampled  
12/04/2013 00:00

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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## ECCS

### Volatile Organic Compounds by Method 8260 - Purge and Trap

Preparation Batch: A312037

Acetone	ND	150	1000	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Benzene	ND	1.6	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Bromobenzene	ND	5.1	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Bromochloromethane	ND	9.6	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Bromodichloromethane	ND	3.4	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Bromoform	ND	15	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Bromomethane	ND	250	250	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
2-Butanone	ND	180	1000	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
n-Butyl Benzene	ND	3.2	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
sec-Butyl Benzene	ND	2.4	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
tert-Butylbenzene	ND	2.7	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Carbon disulfide	ND	2.3	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Carbon tetrachloride	ND	4.1	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Chlorobenzene	ND	3.7	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Chloroethane	ND	250	250	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Chloroform	ND	3.8	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Chloromethane	ND	7.9	50	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
2-Chlorotoluene	ND	2.6	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
4-Chlorotoluene	ND	3.1	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,2-Dibromo-3-chloropropane	ND	11	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Dibromochloromethane	ND	5.3	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,2-Dibromoethane (EDB)	ND	4.9	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Dibromomethane	ND	11	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,2-Dichlorobenzene	ND	2.7	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,4-Dichlorobenzene	ND	4.0	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,3-Dichlorobenzene	ND	4.7	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Dichlorodifluoromethane	ND	5.1	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,1-Dichloroethane	ND	9.3	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,2-Dichloroethane	ND	4.6	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
trans-1,2-Dichloroethene	ND	4.5	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
cis-1,2-Dichloroethene	ND	8.0	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,1-Dichloroethene	ND	7.3	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
2,2-Dichloropropane	ND	10	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,2-Dichloropropane	ND	7.7	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,3-Dichloropropane	ND	4.6	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
cis-1,3-Dichloropropene	ND	5.6	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
trans-1,3-Dichloropropene	ND	4.3	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,1-Dichloropropene	ND	3.6	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Diisopropyl Ether	ND	14	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	

CEI/K/14



2525 Advance Road  
Madison, WI 53718  
608.221.8700 Phone  
608.221.4889 Fax

### Revised Report

GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

### MeOH Blank

A134908-24 (Soil)

Date Sampled  
12/04/2013 00:00

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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### ECCS

#### Volatile Organic Compounds by Method 8260 - Purge and Trap

Preparation Batch: A312037

Ethylbenzene	ND <i>JS</i>	2.1	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Hexachlorobutadiene	ND <i>JS</i>	6.4	100	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
n-Hexane	ND <i>JS</i>	11	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
2-Hexanone	ND	29	1000	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Isopropylbenzene	ND <i>JS</i>	2.3	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
p-Isopropyltoluene	ND	2.8	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Methylene chloride	ND	7.0	100	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
4-Methyl-2-pentanone	ND	39	1000	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Methyl t-Butyl Ether	ND <i>JS</i>	4.3	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Naphthalene	ND <i>JS</i>	3.8	250	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
n-Propyl Benzene	ND <i>JS</i>	3.4	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Styrene	ND	4.0	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,1,1,2-Tetrachloroethane	ND	7.7	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,1,2,2-Tetrachloroethane	ND	6.0	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Tetrachloroethene	ND	5.7	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Tetrahydrofuran	ND	110	500	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Toluene	ND <i>JS</i>	4.0	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,2,3-Trichlorobenzene	ND	5.5	100	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,2,4-Trichlorobenzene	ND	6.4	100	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,1,1-Trichloroethane	ND <i>JS</i>	7.3	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,1,2-Trichloroethane	ND	6.3	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Trichloroethene	ND	4.1	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Trichlorofluoromethane	ND <i>JS</i>	5.4	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,2,3-Trichloropropane	ND	6.5	50	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,1,2-Trichlorotrifluoroethane	ND <i>JS</i>	4.1	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,3,5-Trimethylbenzene	ND <i>JS</i>	2.4	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
1,2,4-Trimethylbenzene	ND <i>JS</i>	3.5	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Vinyl chloride	ND	5.8	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
m,p-Xylene	ND <i>JS</i>	3.1	50	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
o-Xylene	ND <i>JS</i>	3.0	25	ug/kg wet	1	12/09/2013	12/10/2013 23:31	EPA 8260B	
Surrogate: Dibromofluoromethane			105 %	80.4-125		12/09/2013	12/10/2013 23:31	EPA 8260B	
Surrogate: Toluene-d8			95.2 %	94.1-107		12/09/2013	12/10/2013 23:31	EPA 8260B	
Surrogate: 4-Bromofluorobenzene			98.2 %	90.3-110		12/09/2013	12/10/2013 23:31	EPA 8260B	

*CEI/15/14*



LDC #: 31068B1

## VALIDATION COMPLETENESS WORKSHEET

Date: 1/16/14

SDG #: A134908

Level III/IV

Page: 1 of 1

Laboratory: Environmental Chemistry Consulting Services, Inc.

Reviewer: JY4

2nd Reviewer: JY4

METHOD: GC/MS Volatiles (EPA SW 846 Method 8260B)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/03-04/13
II.	GC/MS Instrument performance check	A	
III.	Initial calibration	SW	2 RSD $\leq$ 30/152 r2
IV.	Continuing calibration/ICV	SW	CV/100 $\leq$ 202
V.	Blanks	SW	
VI.	Surrogate spikes	SW	
VII.	Matrix spike/Matrix spike duplicates	SW	
VIII.	Laboratory control samples	A	LCS
IX.	Regional Quality Assurance and Quality Control	N	
X.	Internal standards	SW	
XI.	Target compound identification	A	Not reviewed for Level III validation.
XII.	Compound quantitation/RL/LOQ/LODs	A	Not reviewed for Level III validation.
XIII.	Tentatively identified compounds (TICs)	N	Not reviewed for Level III validation.
XIV.	System performance	A	Not reviewed for Level III validation.
XV.	Overall assessment of data	A	
XVI.	Field duplicates	SW	D <sub>1</sub> = 8, 9 D <sub>2</sub> = 20, 21
XVII.	Field blanks	SW	*TB = 24 EB = Equipment Blank (A134906)

Note: A = Acceptable  
N = Not provided/applicable  
SW = See worksheet

\*ND = No compounds detected  
R = Rinsate  
FB = Field blank

D = Duplicate  
TB = Trip blank  
EB = Equipment blank

Validated Samples: \*\* Indicates sample underwent Level IV validation

1	WS-SB-GP-1 (6-8')	11	WS-SB-GP-8 (2-4')	21	Duplicate 2	31	A 312036-B1k1
2	WS-SB-GP-1 (18-20')**	12	WS-SB-GP-7 (8-9')	22	WS-SB-GP-14 (6-8')	32	A 312037-1
3	WS-SB-GP-2 (14-16')	13	WS-SB-GP-8 (8-10')	23	WS-SB-GP-14 (12-15')	33	
4	WS-SB-GP-2 (18-20')	14	WS-SB-GP-9 (8-10')	24	MeOH Blank	34	
5	WS-SB-GP-3 (4-6')	15	WS-SB-GP-10 (8-10')	25	WS-SB-GP-1 (6-8')MS	35	
6	WS-SB-GP-4 (4-6')	16	WS-SB-GP-11 (8-10')	26	WS-SB-GP-1 (6-8')MSD	36	
7	WS-SB-GP-5 (2-4')**	17	WS-SB-GP-12 (6-8')	27	WS-SB-GP-11 (8-10')MS	37	
8	WS-SB-GP-6 (0-2') D <sub>1</sub>	18	WS-SB-GP-12 (12-15')	28	WS-SB-GP-11 (8-10')MSD	38	
9	Duplicate 1 D <sub>1</sub>	19	WS-SB-GP-13 (6-8')**	29		39	
10	WS-SB-GP-7 (2-4')	20	WS-SB-GP-13 (13-15')	30		40	

**Method:** Volatiles (EPA SW 846 Method 8260B)

Validation Area	Yes	No	NA	Findings/Comments
<b>I. Technical holding times</b>				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>II. GC/MS Instrument performance check</b>				
Were the BFB performance results reviewed and found to be within the specified criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all samples analyzed within the 12 hour clock criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>III. Initial calibration</b>				
Did the laboratory perform a 5 point calibration prior to sample analysis?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a curve fit used for evaluation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Did the initial calibration meet the curve fit acceptance criteria of $\geq 0.990$ ?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent relative standard deviations (%RSD) $\leq 30\%/15\%$ and relative response factors (RRF) $\geq 0.05$ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>IV. Continuing calibration</b>				
Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) and relative response factors (RRF) within method criteria for all CCCs and SPCCs?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all percent differences (%D) $\leq 20\%$ and relative response factors (RRF) $\geq 0.05$ ?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>V. Blanks</b>				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a method blank analyzed at least once every 12 hours for each matrix and concentration?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>VI. Surrogate spikes</b>				
Were all surrogate %R within QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
If the percent recovery (%R) for one or more surrogates was out of QC limits, was a reanalysis performed to confirm samples with %R outside of criteria?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>VII. Matrix spike/Matrix spike duplicates</b>				
Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was a MS/MSD analyzed every 20 samples of each matrix?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>VIII. Laboratory control samples</b>				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

Validation Area	Yes	No	NA	Findings/Comments
Was an LCS analyzed per analytical batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the QC limits?	/			
IX. Regional Quality Assurance and Quality Control				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
X. Internal standards				
Were internal standard area counts within -50% or +100% of the associated calibration standard?	/			
Were retention times within + 30 seconds of the associated calibration standard?	/			
XI. Target compound identification				
Were relative retention times (RRT's) within + 0.06 RRT units of the standard?	/			
Did compound spectra meet specified EPA "Functional Guidelines" criteria?	/			
Were chromatogram peaks verified and accounted for?	/			
XII. Compound quantitation/RLs				
Were the correct internal standard (IS), quantitation ion and relative response factor (RRF) used to quantitate the compound?	/			
Were compound quantitation and RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
XIII. Tentatively identified compounds (TICs)				
Were the major ions (> 10 percent relative intensity) in the reference spectrum evaluated in sample spectrum?			/	
Were relative intensities of the major ions within $\pm$ 20% between the sample and the reference spectra?			/	
Did the raw data indicate that the laboratory performed a library search for all required peaks in the chromatograms (samples and blanks)?		/		
XIV. System performance				
System performance was found to be acceptable.	/			
XV. Overall assessment of data				
Overall assessment of data was found to be acceptable.	/			
XVI. Field duplicates				
Field duplicate pairs were identified in this SDG.	/			
Target compounds were detected in the field duplicates.	/			
XVII. Field blanks				
Field blanks were identified in this SDG.	/			
Target compounds were detected in the field blanks.	/			

## TARGET COMPOUND WORKSHEET

METHOD: VOA

A. Chloromethane	U. 1,1,2-Trichloroethane	OO. 2,2-Dichloropropane	III. n-Butylbenzene	CCCC. 1-Chlorohexane
B. Bromomethane	V. Benzene	PP. Bromochloromethane	JJJ. 1,2-Dichlorobenzene	DDDD. Isopropyl alcohol
C. Vinyl chloride	W. trans-1,3-Dichloropropene	QQ. 1,1-Dichloropropene	KKK. 1,2,4-Trichlorobenzene	EEEE. Acetonitrile
D. Chloroethane	X. Bromoform	RR. Dibromomethane	LLL. Hexachlorobutadiene	FFFF. Acrolein
E. Methylene chloride	Y. 4-Methyl-2-pentanone	SS. 1,3-Dichloropropane	MMM. Naphthalene	GGGG. Acrylonitrile
F. Acetone	Z. 2-Hexanone	TT. 1,2-Dibromoethane	NNN. 1,2,3-Trichlorobenzene	HHHH. 1,4-Dioxane
G. Carbon disulfide	AA. Tetrachloroethene	UU. 1,1,1,2-Tetrachloroethane	OOO. 1,3,5-Trichlorobenzene	IIII. Isobutyl alcohol
H. 1,1-Dichloroethene	BB. 1,1,2,2-Tetrachloroethane	VV. Isopropylbenzene	PPP. trans-1,2-Dichloroethene	JJJJ. Methacrylonitrile
I. 1,1-Dichloroethane	CC. Toluene	WW. Bromobenzene	QQQ. cis-1,2-Dichloroethene	KKKK. Propionitrile
J. 1,2-Dichloroethene, total	DD. Chlorobenzene	XX. 1,2,3-Trichloropropane	RRR. m,p-Xylenes	LLLL. Ethyl ether
K. Chloroform	EE. Ethylbenzene	YY. n-Propylbenzene	SSS. o-Xylene	MMMM. Benzyl chloride
L. 1,2-Dichloroethane	FF. Styrene	ZZ. 2-Chlorotoluene	TTT. 1,1,2-Trichloro-1,2,2-trifluoroethane	NNNN. Iodomethane
M. 2-Butanone	GG. Xylenes, total	AAA. 1,3,5-Trimethylbenzene	UUU. 1,2-Dichlorotetrafluoroethane	OOOO. 1,1-Difluoroethane
N. 1,1,1-Trichloroethane	HH. Vinyl acetate	BBB. 4-Chlorotoluene	VVV. 4-Ethyltoluene	PPPP. <i>n-Hexane</i>
O. Carbon tetrachloride	II. 2-Chloroethylvinyl ether	CCC. tert-Butylbenzene	WWW. Ethanol	QQQQ. <i>Tetrahydrofuran</i>
P. Bromodichloromethane	JJ. Dichlorodifluoromethane	DDD. 1,2,4-Trimethylbenzene	XXX. Di-isopropyl ether	RRRR. <i>1,1,2-Trichlorotrifluoroethane</i>
Q. 1,2-Dichloropropane	KK. Trichlorofluoromethane	EEE. sec-Butylbenzene	YYY. tert-Butanol	SSSS.
R. cis-1,3-Dichloropropene	LL. Methyl-tert-butyl ether	FFF. 1,3-Dichlorobenzene	ZZZ. tert-Butyl alcohol	TTTT.
S. Trichloroethene	MM. 1,2-Dibromo-3-chloropropane	GGG. p-Isopropyltoluene	AAAA. Ethyl tert-butyl ether	UUUU.
T. Dibromochloromethane	NN. Methyl ethyl ketone	HHH. 1,4-Dichlorobenzene	BBBB. tert-Amyl methyl ether	VVVV.

LDC #: 31068 B1

## VALIDATION FINDINGS WORKSHEET

### Initial Calibration

Page: 1 of 1

Reviewer: 34

2nd Reviewer:                     

**METHOD:** GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Did the laboratory perform a 5 point calibration prior to sample analysis?

Y N N/A Were percent relative standard deviations (%RSD) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?

Was a curve fit used for evaluation? If yes, what was the acceptance criteria used for evaluation?  $r^2 \geq 0.99$

Y	N	N/A	Did the initial calibration meet the acceptance criteria?
---	---	-----	---

Y (N) N/A Were all %RSDs and RRFs within the validation criteria of  $\leq 30/15$  %RSD and  $\geq 0.05$  RRF ?

[illegible]

LDC #: 31068 A1

# **VALIDATION FINDINGS WORKSHEET** **Continuing Calibration**

Page: 1 of 4Reviewer: JVG2nd Reviewer: [Signature]**METHOD:** GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A

Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y N N/A

Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?

Y N N/AWere all %D and RRFs within the validation criteria of  $\leq 20\%$  %D and  $\geq 0.05$  RRF?

#	Date	Standard ID	Compound	Finding %D (Limit: $\leq 20.0\%$ )	Finding RRF (Limit: $\geq 0.05$ )	Associated Samples	Qualifications
	12/09/13	A3L0604-SCV1 (1cv)	LL	21.4		A11	J/WJ A
			F	22.9			
			M	23.6			
			X	25.0			
	12/09/13	A3L0901-CCV2 (CCV)	III	30.6		2-5, 10	
			EE	24.5		2-7, 10	
			CCC	25.3		2-5, 10	
			ZZ	25.0		2-7, 10	
			BBB	21.6			
			FFF	22.7			
			I	20.6			
			LLL	33.9			
			GGG	27.5			
			YY	27.9		2-5, 10	
			U	21.2		2-7, 10	
			KK	76.4			
			RRRR	22.8			
			AAA	23.6		2-5, 10	
			DDD	23.2			
3.7)	12/6/13	A3L001-CCV1	KK	43.8		8, 9, 11-13	
	12/10/13	A3L001-CCV2	F	25.5		14, 15, 17-23	
			V	22.5			
			NW	22.4			
			M	23.2			



LDC #: 31068\*1

# VALIDATION FINDINGS WORKSHEET Continuing Calibration

Page: 2 of 4

Reviewer: JVG

2nd Reviewer: CL

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A

Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?

Y N N/A

Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?

Y N N/AWere all %D and RRFs within the validation criteria of  $\leq 20\%$  %D and  $\geq 0.05$  RRF?

into  
from  
p.1

#	Date	Standard ID	Compound	Finding %D (Limit: $\leq 20.0\%$ )	Finding RRF (Limit: $\geq 0.05$ )	Associated Samples	Qualifications
	12/10/13	A3L001-COV2	III	30.3		14, 15, 17-23	J/WJ A
			EE	28.6			
			CCC	30.2			
			K	23.2			
			ZZ	26.0			
			BBB	26.9			
			III	23.1			
			HHH	23.8			
			FFF	21.4			
			I	26.8			
			L	22.2		✓	
			PPP	20.6			
			QQQ	23.6			
			QQ	21.5			
			XXX	31.3		✓	
			EE	21.9		14, 15, 17-20, 22, 23	
			LLL	26.7		14, 15, 17-23	
			VV	24.0			
			GGG	29.9			
			F	21.6			
			LL	22.1		✓	
			YY	29.1		14, 15, 17-19, 21-23	
			FF	23.5		14, 15, 17-23	
			BB	20.7			
			QQQQ	21.9			
			NNN	20.8			
			KKK	24.2		✓	✓

LDC #: 31068A1

# **VALIDATION FINDINGS WORKSHEET** **Continuing Calibration**

Page: 3 of 4  
 Reviewer: JVG  
 2nd Reviewer: CR

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

- ☒ N N/A Was a continuing calibration standard analyzed at least once every 12 hours for each instrument?  
☒ N N/A Were percent differences (%D) and relative response factors (RRF) within method criteria for all CCC's and SPCC's?  
☒ N N/A Were all %D and RRFs within the validation criteria of  $\leq 20\%$  %D and  $\geq 0.05$  RRF?

#	Date	Standard ID	Compound	Finding %D (Limit: $\leq 20.0\%$ )	Finding RRF (Limit: $\geq 0.05$ )	Associated Samples	Qualifications
	12/10/13	A3L001-CCV2	N	24.4		14, 15, 17-23	J/N/A
			Kk	63.5			
			RRRR	25.0			
			AAA	30.1			
			DDD	28.3		14, 15, 17-19, 22, 23	
			RRR	21.2		14, 15, 17-23	
			SSS	20.5			
	12/10/13	A3L001-CCV3	F	21.3		24	
			V	22.4			
			III	33.2			
			EEF	22.3			
			CCC	21.2			
			D	31.8			
			K	22.9			
			ZZ	39.6			
			I	22.2			
			QQQ	20.8			
			XXX	22.3			
			EE	43.9		24, 7	
			LLL	20.6		24	
			VV	23.6			
			MMM	20.7			
			YY	39.2			
			CC	70.0		24, 6-9	
			N	20.8		24	
			Kk	57.1			



LDC #: 31068B1

## VALIDATION FINDINGS WORKSHEET

Blanks

Page: 1 of 1

Reviewer: JVC

2nd Reviewer: CL

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y N N/A Was a method blank associated with every sample in this SDG?

Y N N/A Was a method blank analyzed at least once every 12 hours for each matrix and concentration?

Y N N/A Was there contamination in the method blanks? If yes, please see the qualifications below.

Blank analysis date: 12/09/13

Conc. units: ug/kg

Associated Samples: 1-15

Compound	Blank ID	Sample Identification							
	A312036-B1	1 (5x)	4	12	14	15			
MMM	13	65	8.9 / u						
RKR	4.5	22.5	22 / u	18 / u	5.9 / u	6.3 / u			
SSS	5.0	25	13 / u	10 / u	5.9 / u	5.8 / u			

Blank analysis date: 12/09/13

Conc. units: ug/kg

Associated Samples: 16-24

Compound	Blank ID	Sample Identification							
	A312037-B1	1 (5x)	16	17	18	19	21	22	23
JJ	6.0	30					7.0 / u	7.0 / u	
MMM	9.0	45							
SSS	5.0	25	6.7 / u	8.6 / u	18 / u	8.8 / u			25 / u

All results were qualified using the criteria stated below except those circled.

Note: samples reanalyzed at BL w/o MB.

Note: Common contaminants such as Methylene chloride, Acetone, 2-Butanone, Carbon disulfide and TICs that were detected in samples within ten times the associated method blank concentration were qualified as not detected, "U". Other contaminants within five times the method blank concentration were also qualified as not detected, "U".

LDC #: 31068 B1

## VALIDATION FINDINGS WORKSHEET

Page: 1 of 1

## Field Blanks

Reviewer: JVG2nd Reviewer: OL

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Y N N/A Were field blanks identified in this SDG?Y N N/A Were target compounds detected in the field blanks?Blank units: ug/L Associated sample units: ug/kgSampling date: 12/03/12Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: EB Associated Samples: All except 24

Compound	Blank ID	Sample Identification (either ND or > lox/ex)							
	Equipment Blank (lox/ex)								
F	5.8	58							
G	0.11	0.55							
K	0.42	21							
CC	0.080	0.4							
SSS	0.10	0.5							

Blank units: \_\_\_\_\_ Associated sample units: \_\_\_\_\_

Sampling date: \_\_\_\_\_

Field blank type: (circle one) Field Blank / Rinsate / Trip Blank / Other: \_\_\_\_\_ Associated Samples: \_\_\_\_\_

Compound	Blank ID	Sample Identification							

CIRCLED RESULTS WERE NOT QUALIFIED. ALL RESULTS NOT CIRCLED WERE QUALIFIED BY THE FOLLOWING STATEMENT:

Common contaminants such as Methylene chloride, Acetone, 2-Butanone and Carbon disulfide that were detected in samples within ten times the associated field blank concentration were qualified as not detected, "U". Other contaminants within five times the field blank concentration were also qualified as not detected, "U".





LDC #: 31068B1

# **VALIDATION FINDINGS WORKSHEET** **Matrix Spike/Matrix Spike Duplicates**

Page: 1 of 1

Reviewer: JVG

2nd Reviewer: SL

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

☒ N N/A

Were a matrix spike (MS) and matrix spike duplicate (MSD) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD. Soil / Water.

☒ N N/A

Was a MS/MSD analyzed every 20 samples of each matrix?

☒ N N/A

Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the QC limits?

#	MS/MSD ID	Compound	MS %R (Limits)	MSD %R (Limits)	RPD (Limits)	Associated Samples	Qualifications
	25 / 26	DDD	123 (84.3-121)	( )	( )	1	J det / A
		RRR	121 (87.9-119)	( )	( )	↓	
			( )	( )	( )		
			( )	( )	( )		
	27 / 28	AAA	X ( )	123 (90.4-120)	( )	16	
		DDD	( )	134 (84.3-121)	( )	↓	
		RRR	( )	125 (83.3-117)	( )	↓	
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		
			( )	( )	( )		

	Compound	QC Limits (Soil)	RPD (Soil)	QC Limits (Water)	RPD (Water)
H.	1,1-Dichloroethene	59-172%	< 22%	61-145%	< 14%
S.	Trichloroethene	62-137%	< 24%	71-120%	< 14%
V.	Benzene	66-142%	< 21%	76-127%	< 11%
CC.	Toluene	59-139%	< 21%	76-125%	< 13%
DD.	Chlorobenzene	60-133%	< 21%	75-130%	< 13%



Field Duplicates

Reviewer: JVG

2nd Reviewer: 

Method: GCMS VOA (EPA SW 846 Method 8260B)

Analyte	Concentration (ug/Kg)		RPD (≤50%)
	8	9	
V	18000	13000	32
III	64U	15000	NC
EEE	48U	2700	NC
CCC	54U	23000	NC
EE	80000	61000	27
PPPP	47000	31000	41
VV	6700	5400	21
GGG	1200	54U	NC
MMM	36000	36000	0
YY	32000	25000	25
CC	220000	210000	5
AAA	60000	47000	24
DDD	210000	170000	21
RRR	320000	240000	29
SSS	120000	88000	31

Analyte	Concentration (ug/Kg)		RPD (≤50%)
	20	21	
V	30	98	NC
III	1000	180	139
EEE	390	95	NC
CCC	1100	940	16
JJ	5.8U	7.0	NC
EE	280	7800	186
PPPP	120	640	NC
VV	600	730	20
GGG	120	140	NC
MMM	720	440	NC
YY	2600	2300	12
CC	17	23	NC
AAA	1400	1600	13
DDD	7100	6400	10
RRR	670	300	76
SSS	35	27	NC

NC = not calculated, either one is ND or below 5x LOQ

**VALIDATION FINDINGS WORKSHEET**  
**Initial Calibration Calculation Verification**

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The Relative Response Factor (RRF), average RRF, and percent relative standard deviation (%RSD) were recalculated for the compounds identified below using the following calculations:

$$RRF = (A_x)(C_{is}) / (A_{is})(C_x)$$

average RRF = sum of the RRFs/number of standards

$$\%RSD = 100 * (S/X)$$

$A_x$  = Area of Compound

$C_x$  = Concentration of compound,

S = Standard deviation of the RRFs

$A_{is}$  = Area of associated internal standard

$C_{is}$  = Concentration of internal standard

X = Mean of the RRFs

#	Standard ID	Calibration Date	Compound (IS)	Reported RRF (RRF 25 std)	Recalculated RRF (RRF 25 std)	Reported Average RRF (Initial)	Recalculated Average RRF (Initial)	Reported %RSD	Recalculated %RSD
1	ICAL 2979	12/6/2013 to 12/9/2013	Benzene (IS1)	2.58389	2.58389	2.77964	2.77964	7.751	7.751
			Toluene (IS2)	0.82004	0.82004	0.92229	0.92229	7.554	7.554
			Ethylbenzene (IS3)	1.59568	1.59568	1.73818	1.73818	7.336	7.336
			1,1,2,2-TCA (IS4)	0.68489	0.68489	0.70298	0.70298	6.398	6.398

# **VALIDATION FINDINGS WORKSHEET** **Continuing Calibration Calculation Verification**

METHOD: GC/MS VOA (EPA SW 846 Method 8260B)

The percent difference (%D) of the initial calibration average Relative Response Factors (RRFs) and the continuing calibration RRFs were recalculated for the compounds identified below using the following calculation:

$$\% \text{ Difference} = 100 * (\text{ave. RRF} - \text{RRF}) / \text{ave. RRF}$$

$$\text{RRF} = (\text{Ax})(\text{Cis}) / (\text{Ais})(\text{Cx})$$

Where:

ave. RRF = initial calibration average RRF

RRF = continuing calibration RRF

Ax = Area of compound

Cx = Concentration of compound,

Ais = Area of associated internal standard

Cis = Concentration of internal standard

#	Standard ID	Calibration Date	Compound (IS)	Average RRF (Initial)	Reported RRF (CCV)	Recalculated RRF (CCV)	Reported % D	Recalculated %D
1	A3L0901-CCV1	12/9/2013	Benzene (IS1)	2.779635	2.810624	2.810624	1.1	1.1
			Toluene (IS2)	0.922287	0.949349	0.949349	2.9	2.9
			Ethylbenzene (IS3)	1.738182	1.815947	1.815947	4.5	4.5
			1,1,2,2-TCA (IS4)	0.702984	0.700346	0.700346	0.4	0.4
2	A3L0901-CCV2	12/9/2013	Benzene (IS1)	2.779635	3.261138	3.261138	17.3	17.3
			Toluene (IS2)	0.922287	1.087178	1.087178	17.9	17.9
			Ethylbenzene (IS3)	1.738182	2.060881	2.060881	18.6	18.6
			1,1,2,2-TCA (IS4)	0.702984	0.819161	0.819161	16.5	16.5
3	A3L1001-CCV2	12/10/2013	Benzene (IS1)	2.779635	3.405661	3.405661	22.5	22.5
			Toluene (IS2)	0.922287	1.079930	1.079930	17.1	17.1
			Ethylbenzene (IS3)	1.738182	2.118759	2.118759	21.9	21.9
			1,1,2,2-TCA (IS4)	0.702984	0.848214	0.848214	20.7	20.7

LDC #: 31068 B1

# VALIDATION FINDINGS WORKSHEET Surrogate Results Verification

Page: 1 of 1  
Reviewer: JVG  
2nd reviewer: ON

**METHOD:** GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) of surrogates were recalculated for the compounds identified below using the following calculation:

% Recovery: SF/SS \* 100

Where: SF = Surrogate Found  
SS = Surrogate Spiked

Sample ID: # 2

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane	25.0	26.1	105	105	0
1,2-Dichloroethane-d4	1	23.7	94.8	94.8	1
Toluene-d8		24.0	96.1	96.1	
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					

Sample ID:

	Surrogate Spiked	Surrogate Found	Percent Recovery Reported	Percent Recovery Recalculated	Percent Difference
Dibromofluoromethane					
1,2-Dichloroethane-d4					
Toluene-d8					
Bromofluorobenzene					



LDC #: 31068B1

**VALIDATION FINDINGS WORKSHEET**  
**Matrix Spike/Matrix Spike Duplicates Results Verification**

Page: 1 of 1Reviewer: JVG2nd Reviewer: OL**METHOD:** GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the matrix spike and matrix spike duplicate were recalculated for the compounds identified below using the following calculation:

% Recovery =  $100 * (SSC - SC) / SA$ Where: SSC = Spiked sample concentration  
SA = Spike added

SC = Sample concentration

RPD =  $|MSC - MSC| * 2 / (MSC + MSC)$ 

MSC = Matrix spike concentration

MSDC = Matrix spike duplicate concentration

MS/MSD sample: 25 / 26

Compound	Spike Added ( $\mu\text{g}/\text{kg}$ )		Sample Concentration ( $\mu\text{g}/\text{kg}$ )	Spiked Sample Concentration ( $\mu\text{g}/\text{kg}$ )		Matrix Spike		Matrix Spike Duplicate		MS/MSD	
						Percent Recovery		Percent Recovery		RPD	
	MS	MSD		MS	MSD	Reported	Recalc	Reported	Recalc	Reported	Recalculated
1,1-Dichloroethene	5.0	5.0	0	5.31	5.31	106	106	106	106	0	0
Trichloroethene	1	1	1	5.22	5.32	104	104	106	106	1.90	1.9
Benzene	1	1	1	5.11	5.16	102	102	103	103	0.974	0.974
Toluene	1	1	1	5.41	5.31	108	108	106	106	1.87	1.87
Chlorobenzene	1	1	1	5.12	5.12	102	102	102	102	0	0

Comments: Refer to Matrix Spike/Matrix Spike Duplicates findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31068 B1

# **VALIDATION FINDINGS WORKSHEET** **Laboratory Control Sample Results Verification**

Page: 1 of 1  
 Reviewer: JVG  
 2nd Reviewer: [Signature]

**METHOD:** GC/MS VOA (EPA SW 846 Method 8260B)

The percent recoveries (%R) and Relative Percent Difference (RPD) of the laboratory control sample and laboratory control sample duplicate (if applicable) were recalculated for the compounds identified below using the following calculation:

% Recovery =  $100 * SSC/SA$ 

Where: SSC = Spiked sample concentration  
 SA = Spike added

RPD =  $|LCSC - LCSDC| * 2 / (LCSC + LCSDC)$ 

LCSC = Laboratory control sample concentration LCSDC = Laboratory control sample duplicate concentration

LCS ID: A 312036 - B51

Compound	Spike Added (ug/L)		Spiked Sample Concentration (ug/L)		LCS		LCSD		LCS/LCSD	
					Percent Recovery		Percent Recovery		RPD	
	LCS	LCSD	LCS	LCSD	Reported	Recalc.	Reported	Recalc.	Reported	Recalculated
1,1-Dichloroethene	5.00	NA	4.93	NA	98.6	98.6				
Trichloroethene			5.07		101	101				
Benzene			5.03		101	101				
Toluene			5.10		102	102				
Chlorobenzene			5.02		100	100				

Comments: Refer to Laboratory Control Sample findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

## VALIDATION FINDINGS WORKSHEET

### Sample Calculation Verification

**METHOD:** GC/MS VOA (EPA SW 846 Method 8260B)

(Y) N N/A

Were all reported results recalculated and verified for all level IV samples?

Y / ~~N~~ N/A

Were all recalculated results for detected target compounds agree within 10.0% of the reported results?

$$\text{Concentration} = \frac{(A_s)(I_s)(DF)}{(A_s)(RRF)(V_o)(\%S)}$$

$A_x$  = Area of the characteristic ion (EICP) for the compound to be measured

$A_{is}$  = Area of the characteristic ion (EICP) for the specific internal standard

$I_s$  = Amount of internal standard added in nanograms (ng)

RRF = Relative response factor of the calibration standard.

$V_o$  = Volume or weight of sample pruged in milliliters (ml) or grams (g).

Df = Dilution factor.

%S = Percent solids, applicable to soils and solid matrices only.

Example:

Sample I.D. 7, Toluene

$$\text{Conc.} = \frac{(578237)(25)(500 \text{ ml})(50)}{(736805)(0.922287)(11.74 \text{ g})(0.8452)}$$

$$\approx 54\,000 \text{ ug/kg}$$

[illegible]

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Wedron Community Groundwater  
**Collection Date:** December 3, 2012  
**LDC Report Date:** January 15, 2014  
**Matrix:** Soil  
**Parameters:** Lead  
**Validation Level:** EPA Level III & IV  
**Laboratory:** Environmental Chemistry Consulting Services, Inc./  
Pace Analytical Services, Inc.

**Sample Delivery Group (SDG):** A134908/4089524

### Sample Identification

WS-SB-GP-3 (4-6')  
WS-SB-GP-4 (4-6')  
WS-SB-GP-5 (2-4')\*\*  
WS-SB-GP-6 (0-2')  
Duplicate 1  
WS-SB-GP-7 (2-4')  
WS-SB-GP-8 (2-4')  
WS-SB-GP-7 (8-9')  
WS-SB-GP-8 (8-10')  
WS-SB-GP-9 (8-10')  
WS-SB-GP-10 (8-10')  
WS-SB-GP-11 (8-10')

\*\*Indicates sample underwent EPA Level IV review

## Introduction

This data review covers 12 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per EPA SW 846 Method 6010 for Lead.

This review follows the Quality Assurance Project Plan for EPA Docket No. RCRA 05-2013-0011, Wedron, Illinois (November 2013) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent an EPA Level IV review. An EPA Level III review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by EPA Level III criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. ICPMS Tune**

ICP-MS was not utilized in this SDG.

## **III. Calibration**

The initial and continuing calibrations were performed at the required frequency.

The calibration standards criteria were met.

## **IV. Blanks**

Method blanks were reviewed for each matrix as applicable. No metal contaminants were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

## **V. ICP Interference Check Sample (ICS) Analysis**

The frequency of analysis was met.

The criteria for analysis were met.

## **VI. Matrix Spike/Matrix Spike Duplicates**

The laboratory has indicated that there were no matrix spike (MS) and matrix spike duplicate (MSD) analyses specified for the samples in this SDG, and therefore matrix spike and matrix spike duplicate analyses were not performed for this SDG.

## **VII. Duplicate Sample Analysis**

The laboratory has indicated that there were no duplicate (DUP) analyses specified for the samples in this SDG, and therefore duplicate analyses were not performed for this SDG.

## **VIII. Laboratory Control Samples (LCS)**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.



## **IX. Internal Standards (ICP-MS)**

ICP-MS was not utilized in this SDG.

## **X. ICP Serial Dilution**

ICP serial dilution was not performed for this SDG.

## **XI. Sample Result Verification**

All sample result verifications were acceptable for samples on which an EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

## **XII. Overall Assessment of Data**

Data flags are summarized at the end of this report if data has been qualified.

## **XIII. Field Duplicates**

Samples WS-SB-GP-6 (0-2') and Duplicate 1 were identified as field duplicates. No metals were detected greater than 5x the reporting limit in any of the samples with the following exceptions:

Analyte	Concentration (mg/Kg)		RPD (Limits)
	WS-SB-GP-6 (0-2')	Duplicate 1	
Lead	8.9	7.3	20 (≤50)

**Wedron Community Groundwater  
Lead - Data Qualification Summary - SDG A134908/4089524**

No Sample Data Qualified in this SDG

**Wedron Community Groundwater  
Lead - Laboratory Blank Data Qualification Summary - SDG A134908/4089524**

No Sample Data Qualified in this SDG

**Wedron Community Groundwater  
Lead - Field Blank Data Qualification Summary - SDG A134908/4089524**

No Sample Data Qualified in this SDG

**METHOD:** Lead (EPA SW 846 Method 6010)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/3/12
II.	ICP/MS Tune	N	Not utilized
III.	Calibration	A	
IV.	Blanks	A	
V.	ICP Interference Check Sample (ICS) Analysis	A	
VI.	Matrix Spike Analysis	N	CS
VII.	Duplicate Sample Analysis	N	
VIII.	Laboratory Control Samples (LCS)	A	LCS
IX.	Internal Standard (ICP-MS)	N	Not utilized
X.	Furnace Atomic Absorption QC	N	↓
XI.	ICP Serial Dilution	✓	
XII.	Sample Result Verification	A	Not reviewed for Level III validation.
XIII.	Overall Assessment of Data	A	
XIV.	Field Duplicates (75%)	SW	(4,5)
XV.	Field Blanks	N	

Note: A = Acceptable ND = No compounds detected D = Duplicate  
N = Not provided/applicable R = Rinsate TB = Trip blank  
SW = See worksheet FB = Field blank EB = Equipment blank

Validated Samples: \*\* Indicates sample underwent Level IV validation

1	WS-SB-GP-3 (4-6')	11	WS-SB-GP-10 (8-10')	21		31	
2	WS-SB-GP-4 (4-6')	12	WS-SB-GP-11 (8-10')	22		32	
3	WS-SB-GP-5 (2-4')**	13		23		33	
4	WS-SB-GP-6 (0-2')	14		24		34	
5	Duplicate 1	15		25		35	
6	WS-SB-GP-7 (2-4')	16		26		36	
7	WS-SB-GP-8 (2-4')	17		27		37	
8	WS-SB-GP-7 (8-9')	18		28		38	
9	WS-SB-GP-8 (8-10')	19		29		39	
10	WS-SB-GP-9 (8-10')	20		30		40	

Notes: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Method: Metals (EPA SW 846 Method 6010B/7000/6020)**

Validation Area	Yes	No	NA	Findings/Comments
<b>I. Technical holding times</b>				
All technical holding times were met.	/			
Cooler temperature criteria was met.	/			
<b>II. ICP/MS Tune</b>				
Were all isotopes in the tuning solution mass resolution within 0.1 amu?			/	
Were %RSD of isotopes in the tuning solution $\leq 5\%$ ?			/	
<b>III. Calibration</b>				
Were all instruments calibrated daily, each set-up time?	/			
Were the proper number of standards used?	/			
Were all initial and continuing calibration verification %Rs within the 90-110% (80-120% for mercury) QC limits?	/			
Were all initial calibration correlation coefficients $\geq 0.995$ ?	/			
<b>IV. Blanks</b>				
Was a method blank associated with every sample in this SDG?	/			
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.		/		
<b>V. ICP Interference Check Sample</b>				
Were ICP interference check samples performed daily?	/			
Were the AB solution percent recoveries (%R) with the 80-120% QC limits?	/			
<b>VI. Matrix spike/Matrix spike duplicates</b>				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.		/		
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.			/	
Were the MS/MSD or duplicate relative percent differences (RPD) $\leq 20\%$ for waters and $\leq 35\%$ for soil samples? A control limit of $\pm RL$ ( $\pm 2X RL$ for soil) was used for samples that were $\leq 5X$ the RL, including when only one of the duplicate sample values were $\leq 5X$ the RL.			/	
<b>VII. Laboratory control samples</b>				
Was an LCS analyzed for this SDG?	/			
Was an LCS analyzed per extraction batch?	/			
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% QC limits for water samples and laboratory established QC limits for soils?	/			

Validation Area	Yes	No	NA	Findings/Comments
<b>VIII. Furnace Atomic Absorption QC</b>				
If MSA was performed, was the correlation coefficients > 0.995?			/	
Do all applicable analyses have duplicate injections? (Level IV only)			/	
For sample concentrations > RL, are applicable duplicate injection RSD values < 20%? (Level IV only)			/	
Were analytical spike recoveries within the 85-115% QC limits?			/	
<b>IX. ICP Serial Dilution</b>				
Was an ICP serial dilution analyzed if analyte concentrations were > 50X the MDL (ICP)/>100X the MDL(ICP/MS)?		/		
Were all percent differences (%Ds) < 10%?			/	
Was there evidence of negative interference? If yes, professional judgement will be used to qualify the data.			/	
<b>X. Internal Standards (EPA SW 846 Method 6020/EPA 200.8)</b>				
Were all the percent recoveries (%R) within the 30-120% (6020)/60-125% (200.8) of the intensity of the internal standard in the associated initial calibration?			/	
If the %Rs were outside the criteria, was a reanalysis performed?			/	
<b>XI. Regional Quality Assurance and Quality Control</b>				
Were performance evaluation (PE) samples performed?		/		
Were the performance evaluation (PE) samples within the acceptance limits?			/	
<b>XII. Sample Result Verification</b>				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	/			
<b>XIII. Overall assessment of data</b>				
Overall assessment of data was found to be acceptable.	/			
<b>XIV. Field duplicates</b>				
Field duplicate pairs were identified in this SDG.		/		
Target analytes were detected in the field duplicates.			/	
<b>XV. Field blanks</b>				
Field blanks were identified in this SDG.		/		
Target analytes were detected in the field blanks.			/	

VALIDATION FINDINGS WORKSHEET  
Field Duplicates

Method: Metals

Analyte	Concentration (mg/Kg)		RPD (≤ 50)
	4	5	
Lead	8.9	7.3	20



LDC #: 31068B9

**VALIDATION FINDINGS WORKSHEET**  
**Initial and Continuing Calibration Calculation Verification**

Page: 1 of 1  
Reviewer: CR  
2nd Reviewer: ✓

**METHOD:** Trace Metals (EPA SW 846 Method 6010/6020/7000)

An initial and continuing calibration verification percent recovery (%R) was recalculated for each type of analysis using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = concentration (in ug/L) of each analyte measured in the analysis of the ICV or CCV solution  
True = concentration (in ug/L) of each analyte in the ICV or CCV source

Standard ID	Type of Analysis	Element	Found (ug/L)	True (ug/L)	Recalculated	Reported	Acceptable (Y/N)
					%R	%R	
ICV	ICP (Initial calibration)	Pb	503	500	100.6	100.6	Y
	ICP/MS (Initial calibration)						
	CVAA (Initial calibration)						
CCV	ICP (Continuing calibration)	Pb	494	500	98.7	98.7	Y
	ICP/MS (Continuing calibration)						
	CVAA (Continuing calibration)						
	GFAA (Initial calibration)						
	GFAA (Continuing calibration)						

Comments: Refer to Calibration Verification findings worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31068B4

# VALIDATION FINDINGS WORKSHEET Level IV Recalculation Worksheet

Page: 1 of 1  
Reviewer: QR  
2nd Reviewer: LN

**METHOD:** Trace Metals (EPA SW 846 Method 6010/6020/7000)

Percent recoveries (%R) for an ICP interference check sample, a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$$\%R = \frac{\text{Found}}{\text{True}} \times 100$$

Where, Found = Concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation,  
Found = SSR (spiked sample result) - SR (sample result).  
True = Concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$$RPD = \frac{|S-D|}{(S+D)/2} \times 100$$

Where, S = Original sample concentration  
D = Duplicate sample concentration

An ICP serial dilution percent difference (%D) was recalculated using the following formula:

$$\%D = \frac{|I-SDR|}{I} \times 100$$

Where, I = Initial Sample Result (mg/L)  
SDR = Serial Dilution Result (mg/L) (Instrument Reading x 5)

Sample ID	Type of Analysis	Element	Found / S / I (units)	True / D / SDR (units)	Recalculated	Reported	Acceptable (Y/N)
					%R / RPD / %D	%R / RPD / %D	
<u>ICSA B</u>	ICP interference check	<u>Pb</u>	<u>479.7</u>	<u>500</u>	<u>95.9</u>	<u>95.9</u>	<u>Y</u>
<u>LCS</u>	Laboratory control sample		<u>48.4</u>	<u>50</u>	<u>97</u>	<u>97</u>	<u>Y</u>
<u>N</u>	Matrix spike		(SSR-SR)				
<u>N</u>	Duplicate						
<u>N</u>	ICP serial dilution						

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.

LDC #: 31068BY

## VALIDATION FINDINGS WORKSHEET

### Sample Calculation Verification

Page: 1 of 1

Reviewer: OR  
2nd reviewer: W

**METHOD:** Trace Metals (EPA SW 846 Method 6010/6020/7000)

Please see qualifications below for all questions answered "N". Not applicable questions are identified as "N/A".

Y	N	N/A	Have results been reported and calculated correctly?
Y	N	N/A	Are results within the calibrated range of the instruments and within the linear range of the ICP?
Y	N	N/A	Are all detection limits below the CRDL?

Detected analyte results for 85 were recalculated and verified using the following equation:

$$\text{Concentration} = \frac{(\text{RD})(\text{FV})(\text{Dil})}{(\text{In. Vol.})}$$

**Recalculation:**

RD	=	Raw data concentration
FV	=	Final volume (ml)
ln. Vol.	=	Initial volume (ml) or weight (G)
Dil	=	Dilution factor

$$\frac{50 \text{ mL } (63.66 \text{ mg/L})}{0.894 (0.523) (1000)} = 6808 \text{ mg/kg}$$

[illegible]

Note: \_\_\_\_\_

## Laboratory Data Consultants, Inc. Data Validation Report

**Project/Site Name:** Wedron Community Groundwater  
**Collection Date:** December 3 through December 4, 2012  
**LDC Report Date:** January 15, 2014  
**Matrix:** Soil  
**Parameters:** Wet Chemistry  
**Validation Level:** EPA Level III & IV  
**Laboratory:** Environmental Chemistry Consulting Services, Inc./  
Pace Analytical Services, Inc.

**Sample Delivery Group (SDG):** A134908/4089524

### Sample Identification

WS-SB-GP-2 (14-16')  
WS-SB-GP-2 (18-20')  
WS-SB-GP-3 (4-6')  
WS-SB-GP-4 (4-6')  
WS-SB-GP-5 (2-4')\*\*  
WS-SB-GP-6 (0-2')  
Duplicate 1  
WS-SB-GP-7 (2-4')  
WS-SB-GP-8 (2-4')  
WS-SB-GP-7 (8-9')  
WS-SB-GP-8 (8-10')  
WS-SB-GP-9 (8-10')  
WS-SB-GP-10 (8-10')  
WS-SB-GP-11 (8-10')  
WS-SB-GP-12 (6-8')  
WS-SB-GP-12 (12-15')  
WS-SB-GP-13 (13-15')  
WS-SB-GP-14 (12-15')  
WS-SB-GP-2 (14-16')DUP  
WS-SB-GP-3 (4-6')DUP

\*\*Indicates sample underwent EPA Level IV review

## Introduction

This data review covers 20 soil samples listed on the cover sheet including dilutions and reanalysis as applicable. The analyses were per ASTM Method D2974-87 for Fractional Organic Carbon and EPA SW 846 Method 9045 for pH.

This review follows the Quality Assurance Project Plan for EPA Docket No. RCRA 05-2013-0011, Wedron, Illinois (November 2013) and a modified outline of the USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Superfund Data Review (January 2010).

A qualification summary table is provided at the end of this report if data has been qualified. Flags are classified as P (protocol) or A (advisory) to indicate whether the flag is due to a laboratory deviation from a specified protocol or is of technical advisory nature.

Samples indicated by a double asterisk on the front cover underwent an EPA Level IV review. An EPA Level III review was performed on all of the other samples. Raw data were not evaluated for the samples reviewed by EPA Level III criteria since this review is based on QC data.

The following are definitions of the data qualifiers:

- U Indicates the compound or analyte was analyzed for but not detected at or above the stated limit.
- J Indicates an estimated value.
- R Quality control indicates the data is not usable.
- NJ Presumptive evidence of presence of the compound at an estimated quantity.
- UJ Indicates the compound or analyte was analyzed for but not detected. The sample detection limit is an estimated value.
- A Indicates the finding is based upon technical validation criteria.
- P Indicates the finding is related to a protocol/contractual deviation.
- None Indicates the data was not significantly impacted by the finding, therefore qualification was not required.

## **I. Technical Holding Times**

All technical holding time requirements were met.

The chain-of-custodies were reviewed for documentation of cooler temperatures. All cooler temperatures met validation criteria.

## **II. Initial Calibration**

All criteria for the initial calibration of each method were met

## **III. Continuing Calibration**

Continuing calibration frequency and analysis criteria were met for each method when applicable.

## **IV. Blanks**

Method blanks were reviewed for each matrix as applicable. No contaminant concentrations were found in the initial, continuing and preparation blanks.

No field blanks were identified in this SDG.

## **V. Matrix Spike/Matrix Spike Duplicates**

Matrix spike (MS) and matrix spike duplicate analyses were not required by the method.

## **VI. Duplicates**

Duplicate (DUP) sample analyses were reviewed for each matrix as applicable. Results were within QC limits.

## **VII. Laboratory Control Samples**

Laboratory control samples were reviewed for each matrix as applicable. Percent recoveries (%R) were within QC limits.

## **VIII. Sample Result Verification**

All sample result verifications were acceptable for samples on which an EPA Level IV review was performed. Raw data were not evaluated for the samples reviewed by EPA Level III criteria.

## **IX. Overall Assessment of Data**

Data flags are summarized at the end of this report if data has been qualified.

## X. Field Duplicates

Samples WS-SB-GP-6 (0-2') and Duplicate 1 were identified as field duplicates. No contaminant concentrations were detected greater than 5x the reporting limit in any of the samples with the following exceptions:

Analyte	Concentration (units)		RPD (Limits)
	WS-SB-GP-6 (0-2')	Duplicate 1	
pH	9.4	8.3	12 ( $\leq 50$ )



**Wedron Community Groundwater  
Wet Chemistry - Data Qualification Summary - SDG A134908/4089524**

No Sample Data Qualified in this SDG

**Wedron Community Groundwater  
Wet Chemistry - Laboratory Blank Data Qualification Summary - SDG  
A134908/4089524**

No Sample Data Qualified in this SDG

**Wedron Community Groundwater  
Wet Chemistry - Field Blank Data Qualification Summary - SDG A134908/4089524**

No Sample Data Qualified in this SDG

LDC #: 31068B6

**VALIDATION COMPLETENESS WORKSHEET**

SDG #: A134908/4089524

Level III/IV

Laboratory: Environmental Chemistry Consulting Services, Inc./Pace Analytical Services, Inc.

Date: 1/14/13

Page: 1 of 1

Reviewer: [Signature]

2nd Reviewer: [Signature]

**METHOD: (Analyte)** Fractional Organic Carbon (ASTM D2974-87), pH (EPA SW846 Method 9045)

The samples listed below were reviewed for each of the following validation areas. Validation findings are noted in attached validation findings worksheets.

	Validation Area		Comments
I.	Technical holding times	A	Sampling dates: 12/3-4/17
II	Initial calibration	A	
III.	Calibration verification	A	
IV	Blanks	A	
V	Matrix Spike/Matrix Spike Duplicates	N	Not required
VI.	Duplicates	A	DP
VII.	Laboratory control samples	A	LCS
VIII.	Sample result verification	A	Not reviewed for Level III validation.
IX.	Overall assessment of data	A	
X.	Field duplicates (75x)	SW	(6,7)
XI	Field blanks	N	

Note: A = Acceptable

N = Not provided/applicable

SW = See worksheet

ND = No compounds detected

R = Rinsate

FB = Field blank

D = Duplicate

TB = Trip blank

EB = Equipment blank

Validated Samples: \*\* Indicates sample underwent Level IV validation

1	WS-SB-GP-2 (14-16')	11	WS-SB-GP-8 (8-10')	21		31	
2	WS-SB-GP-2 (18-20')	12	WS-SB-GP-9 (8-10')	22		32	
3	WS-SB-GP-3 (4-6')	13	WS-SB-GP-10 (8-10')	23		33	
4	WS-SB-GP-4 (4-6')	14	WS-SB-GP-11 (8-10')	24		34	
5	WS-SB-GP-5 (2-4')**	15	WS-SB-GP-12 (6-8')	25		35	
6	WS-SB-GP-6 (0-2')	16	WS-SB-GP-12 (12-15')	26		36	
7	Duplicate 1	17	WS-SB-GP-13 (13-15')	27		37	
8	WS-SB-GP-7 (2-4')	18	WS-SB-GP-14 (12-15')	28		38	
9	WS-SB-GP-8 (2-4')	19	WS-SB-GP-2 (14-16')DUP	29		39	
10	WS-SB-GP-7 (8-9')	20	WS-SB-GP-3 (4-6')DUP	30		40	

Notes: \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

Method: Inorganics (EPA Method Recover)

Validation Area	Yes	No	NA	Findings/Comments
<b>I. Technical holding times</b>				
All technical holding times were met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Cooler temperature criteria was met.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>II. Calibration</b>				
Were all instruments calibrated daily, each set-up time?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the proper number of standards used?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were all initial calibration correlation coefficients $\geq 0.995$ ?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were all initial and continuing calibration verification %Rs within the 90-110% QC limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were titrant checks performed as required? (Level IV only)	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were balance checks performed as required? (Level IV only)	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>III. Blanks</b>				
Was a method blank associated with every sample in this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was there contamination in the method blanks? If yes, please see the Blanks validation completeness worksheet.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
<b>IV. Matrix spike/Matrix spike duplicates and Duplicates</b>				
Were a matrix spike (MS) and duplicate (DUP) analyzed for each matrix in this SDG? If no, indicate which matrix does not have an associated MS/MSD or MS/DUP. Soil / Water.	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the MS/MSD percent recoveries (%R) and the relative percent differences (RPD) within the 75-125 QC limits? If the sample concentration exceeded the spike concentration by a factor of 4 or more, no action was taken.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Were the MS/MSD or duplicate relative percent differences (RPD) $\leq 20\%$ for waters and $\leq 35\%$ for soil samples? A control limit of $\leq \text{CRDL}$ ( $\leq 2\text{X CRDL}$ for soil) was used for samples that were $\leq 5\text{X}$ the CRDL, including when only one of the duplicate sample values were $\leq 5\text{X}$ the CRDL.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>V. Laboratory control samples</b>				
Was an LCS analyzed for this SDG?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Was an LCS analyzed per extraction batch?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were the LCS percent recoveries (%R) and relative percent difference (RPD) within the 80-120% (85-115% for Method 300.0) QC limits?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>VI. Regional Quality Assurance and Quality Control</b>				
Were performance evaluation (PE) samples performed?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Were the performance evaluation (PE) samples within the acceptance limits?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

DC #: 310688B6

VALIDATION FINDINGS CHECKLIST

Page: 2 of 3  
 Reviewer: SL  
 2nd Reviewer: W

Validation Area	Yes	No	NA	Findings/Comments
<b>VII. Sample Result Verification</b>				
Were RLs adjusted to reflect all sample dilutions and dry weight factors applicable to level IV validation?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Were detection limits < RL?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>VIII. Overall assessment of data</b>				
Overall assessment of data was found to be acceptable.	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>IX. Field duplicates</b>				
Field duplicate pairs were identified in this SDG.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Target analytes were detected in the field duplicates.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
<b>X. Field blanks</b>				
Field blanks were identified in this SDG.	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	
Target analytes were detected in the field blanks.	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	

LDC #: 310688B6

## VALIDATION FINDINGS WORKSHEET

### Sample Specific Analysis Reference

Page: 1 of 1

Reviewer: CR

2nd reviewer: [Signature]

All circled methods are applicable to each sample.

[illegible]

Comments: \_\_\_\_\_

LDC: 31068B6

**VALIDATION FINDINGS WORKSHEET**  
**Field Duplicates**

Page 1 of 1  
Reviewer: [Signature]  
2nd Reviewer: [Signature]

**Method:** Inorganics (see cover)

Analyte	Concentration (units)		RPD (≤ 50)
	6	7	
pH	9.4	8.3	12

LDC #: 31008B6**VALIDATION FINDINGS WORKSHEET**  
**Level IV Recalculation Worksheet**Page: 1 of 1  
Reviewer: QR  
2nd Reviewer: W**METHOD:** Inorganics, Method See cover

Percent recoveries (%R) for a laboratory control sample and a matrix spike sample were recalculated using the following formula:

$\%R = \frac{\text{Found}}{\text{True}} \times 100$       Where,      Found = concentration of each analyte measured in the analysis of the sample. For the matrix spike calculation, Found = SSR (spiked sample result) - SR (sample result).  
True = concentration of each analyte in the source.

A sample and duplicate relative percent difference (RPD) was recalculated using the following formula:

$RPD = \frac{|S-D|}{(S+D)/2} \times 100$       Where,      S = Original sample concentration  
D = Duplicate sample concentration

Sample ID	Type of Analysis	Element	Found / S (units)	True / D (units)	Recalculated	Reported	Acceptable (Y/N)
					%R / RPD	%R / RPD	
LCS	Laboratory control sample	FOC	328	329	100	100	Y
Y	Matrix spike sample		(SSR-SR)				
20	Duplicate sample	pH	8.3	8.3	0	0	Y

Comments: Refer to appropriate worksheet for list of qualifications and associated samples when reported results do not agree within 10.0% of the recalculated results.







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Madison, WI 53718  
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### Revised Report

GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

### WS-SB-GP-3 (4-6')

A134908-05 (Soil)

Date Sampled  
12/03/2013 10:55

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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### Pace Analytical

#### ASTM D2974-87

#### Preparation Batch:WET 17181

Fractional Organic Carbon	0.59	0.058	0.058	% (w/w)	1	12/06/2013	12/06/2013 13:15	ASTM D2974-87	FOC
Percent Moisture	14.9	0.10	0.10	% dry	1	12/06/2013	12/06/2013 12:13	ASTM D2974-87	

#### EPA 6010

#### Preparation Batch:MPRP 9595

Lead	6.0	0.30	1.0	mg/kg dry	1	12/09/2013	12/10/2013 15:06	EPA 6010	
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#### EPA 9045

#### Preparation Batch:WET 17269

pH at 25 Degrees C	8.3	0.010	0.10	Std. Units	1	12/13/2013	12/13/2013 20:25	EPA 9045	H6
--------------------	-----	-------	------	------------	---	------------	------------------	----------	----

02-15/14



# Revised Report

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Madison, WI 53718  
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GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

WS-SB-GP-4 (4-6')

A134908-06 (Soil)

Date Sampled  
12/03/2013 11:25

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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## Pace Analytical

### ASTM D2974-87

Preparation Batch:PMST 9272

Percent Moisture	20.4	0.10	0.10	% dry	1	12/06/2013	12/06/2013 12:13	ASTM D2974-87	
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### EPA 6010

Preparation Batch:MPRP 9595

Lead	9.0	0.31	1.1	mg/kg dry	1	12/09/2013	12/10/2013 15:08	EPA 6010	
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### EPA 9040

Preparation Batch:WET 17268

pH	8.4	0.010	0.10	Std. Units	1	12/13/2013	12/13/2013 20:15	EPA 9040	H6, 1q
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02/15/14



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### Revised Report

GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

WS-SB-GP-5 (2-4')

A134908-07 (Soil)

Date Sampled  
12/03/2013 11:59

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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#### Pace Analytical

##### ASTM D2974-87

##### Preparation Batch:WET 17181

Fractional Organic Carbon	0.66	0.058	0.058	% (w/w)	1	12/06/2013	12/06/2013 13:16	ASTM D2974-87	FOC
Percent Moisture	10.6	0.10	0.10	% dry	1	12/06/2013	12/06/2013 12:13	ASTM D2974-87	

##### EPA 6010

##### Preparation Batch:MPRP 9595

Lead	6.8	0.31	1.1	mg/kg dry	1	12/09/2013	12/10/2013 15:10	EPA 6010	
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##### EPA 9045

##### Preparation Batch:WET 17269

pH at 25 Degrees C	8.4	0.010	0.10	Std. Units	1	12/13/2013	12/13/2013 20:25	EPA 9045	H6
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02/15/14



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### Revised Report

GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

**WS-SB-GP-6 (0-2')**

**A134908-08 (Soil)**

Date Sampled  
12/03/2013 12:26

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
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### Pace Analytical

#### ASTM D2974-87

**Preparation Batch:PMST 9272**

Percent Moisture	16.3	0.10	0.10	% dry	1	12/06/2013	12/06/2013 12:13	ASTM D2974-87	
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#### EPA 6010

**Preparation Batch:MPRP 9595**

Lead	8.9	0.32	1.1	mg/kg dry	1	12/09/2013	12/10/2013 15:17	EPA 6010	
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#### EPA 9045

**Preparation Batch:WET 17269**

pH at 25 Degrees C	9.4	0.010	0.10	Std. Units	1	12/13/2013	12/13/2013 20:25	EPA 9045	H6
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02/15/14



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### Revised Report

GZA GeoEnvironmental, Inc  
20900 Swenson Drive, Suite 150  
Waukesha WI, 53186

Project: Wedron Silica - Wedron, IL  
Project Number: 20.0151178.51  
Project Manager: Bernard Fenelon

Reported:  
01/14/2014

### Duplicate 1

A134908-09 (Soil)

Date Sampled  
12/03/2013 12:30

Analyte	Result	Limit of Detection	Limit of Quantitation	Units	Dilution	Prepared	Analyzed	Method	Qualifiers
---------	--------	-----------------------	--------------------------	-------	----------	----------	----------	--------	------------

### Pace Analytical

#### ASTM D2974-87

#### Preparation Batch:PMST 9272

Percent Moisture	9.5	0.10	0.10	% dry	1	12/06/2013	12/06/2013 12:13	ASTM D2974-87	
------------------	-----	------	------	-------	---	------------	------------------	------------------	--

#### EPA 6010

#### Preparation Batch:MPRP 9595

Lead	7.3	0.32	1.1	mg/kg dry	1	12/09/2013	12/10/2013 15:19	EPA 6010	
------	-----	------	-----	-----------	---	------------	------------------	----------	--

#### EPA 9045

#### Preparation Batch:WET 17269

pH at 25 Degrees C	8.3	0.010	0.10	Std. Units	1	12/13/2013	12/13/2013 20:25	EPA 9045	H6
--------------------	-----	-------	------	------------	---	------------	------------------	----------	----

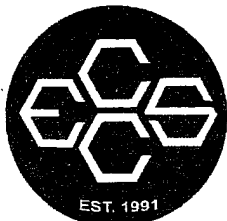
02/15/14



## **APPENDIX C**

### **Chain-of-Custody Forms**





**Environmental Chemistry  
Consulting Services, Inc.**  
2525 Advance Road  
Madison, WI 53718  
608-221-8700 (phone)  
608-221-4889 (fax)

# CHAIN OF CUSTODY

Page 1 of 3

Project Number: <u>20.0151178.51</u>				Analyses Requested				Lab Work Order #: <u>A134908</u>				Mail Report To: <u>Bernard Fenelon</u>			
Project Name: <u>Wedron Silica</u>				Preservation Codes								Company: <u>GZA Geoenvironmental</u>			
Project Location: <u>Wedron, IL</u>				F A								Address: <u>20900 Swenson Dr Ste 150</u>			
Turn Around (circle one): <u>Normal</u> Rush												Waukegan, WI 53186			
If Rush, Report Due Date:												E-mail Address: <u>bernard.fenelon@gza.com</u>			
Sampled By (Print): <u>ELLIE STAPLETON</u>												Invoice To: <u>Same</u>			
												Company:			
												Address:			
Sample Description		Collection Date Time		Matrix	Total # of Containers	VOCs	Dry Weight	FOC	Lead	pH	Comments		Lab ID	Lab Receipt Time	
WS-SB-GP-1 (6-8')		12/3/2013 9:15		S	2	X	X						01		
WS-SB-GP-1 (18-20)		12/3/2013 9:21		S	2	X	X						02		
WS-SB-GP-2 (14-16)		12/3/2013 10:14		S	3	X	X	X					03		
WS-SB-GP-2 (18-20)		12/3/2013 10:20		S	3	X	X	X					04		
WS-SB-GP-3 (4-6)		12/3/2013 10:55		S	3	X	X	X	X	X			05		
WS-SB-GP-4 (4-6)		12/3/2013 11:25		S	3	X	X		X	X			06		
WS-SB-GP-5 (2-4)		12/3/2013 11:59		S	3	X	X	X	X	X			07		
WS-SB-GP-6 (0-2)		12/3/2013 12:26		S	3	X	X		X	X			08		
Duplicate 1		12/3/2013 12:30		S	2	X	X		X	X			09		
WS-SB-GP-7 (2-4)		12/3/2013 2:08		S	3	X	X		X	X			10		
Preservation Codes A=None B=HCL C=H <sub>2</sub> SO <sub>4</sub> D=HNO <sub>3</sub> E=EnCore F=Methanol G=NaOH O=Other (Indicate)		Relinquished By: <u>Ellie Stapleton</u>				Date: <u>12/4/2013</u>		Time: <u>13:28</u>		Received By: <u>M. Jurska</u>		Date: <u>12/4/13</u>		Time: <u>13:28</u>	
		Relinquished By:				Date:		Time:		Received By:		Date:		Time:	
Matrix Codes A=Air S=Soil W=Water O=Other		Custody Seal: Present/Absent Intact/Not Intact Seal #s				Shipped Via: <u>dropped off</u>		Receipt Temp: <u>5/N 130492013</u>		Temp Blank <u>Y</u> N <u>3.4°C</u>		<u>exp 8-9-15</u>			



**Environmental Chemistry  
Consulting Services, Inc.**  
2525 Advance Road  
Madison, WI 53718  
608-221-8700 (phone)  
608-221-4889 (fax)

# CHAIN OF CUSTODY

Page 2 of 3

Project Number: <u>20.0151178.51</u>				Lab Work Order #: <u>A134908</u>				Mail Report To: <u>Bernard Fenelon</u>					
Project Name: <u>Wedron Silica</u>				Analyses Requested				Company: <u>GZA Geoenvironmental</u>					
Project Location: <u>Wedron, IL</u>				Preservation Codes				Address: <u>20900 Swenson Dr. Ste 150</u>					
Turn Around (circle one): <u>Normal</u> Rush				F A				E-mail Address: <u>bernard.fenelon@gza.com</u>					
If Rush, Report Due Date:				VOCs				Invoice To: <u>Same</u>					
Sampled By (Print): <u>ELLIE STAPLETON</u>				Dry Weight				Company:					
				FOC				Address:					
				Lead									
				pH									
Sample Description		Collection Date Time		Matrix	Total # of Containers	VOCs	Dry Weight	FOC	Lead	pH	Comments	Lab ID	Lab Receipt Time
WS-SB-GP-8 (2-4)		12/3/2013 2:30		S	3	X	X		X	X		11	
WS-SB-GP-7 (8-9)		12/3/2013 2:46		S	3	X	X		X	X		12	
WS-SB-GP-8 (8-10)		12/3/2013 2:55		S	3	X	X	X	X	X		13	
WS-SB-GP-9 (8-10)		12/3/2013 3:40		S	2	X	X	X	X	X		14	
WS-SB-GP-10 (8-10)		12/3/2013 3:50		S	3	X	X		X	X		15	
WS-SB-GP-11 (8-10)		12/3/2013 4:27		S	3	X	X		X	X		16	
WS-SB-GP-12 (6-8)		12/4/2013 8:10		S	3	X	X	X				17	
WS-SB-GP-12 (12-15)		12/4/2013 8:20		S	2	X	X	X				18	
WS-SB-GP-13 (6-8)		12/4/2013 8:53		S	3	X	X					19	
WS-SB-GP-13 (13-15)		12/4/2013 9:03		S	3	X	X	X				20	
Preservation Codes A=None B=HCL C=H <sub>2</sub> SO <sub>4</sub> D=HNO <sub>3</sub> E=EnCore F=Methanol G=NaOH O=Other (Indicate)		Relinquished By: <u>[Signature]</u>		Date: <u>12/4/2013</u>		Time: <u>13:28</u>		Received By: <u>[Signature]</u>		Date: <u>12/4/13</u>		Time: <u>13:28</u>	
Matrix Codes A=Air S=Soil W=Water O=Other		Custody Seal: Present/Absent Intact/Not Intact Seal #s		Shipped Via: <u>[Signature]</u>		Receipt Temp: <u>3.4°C</u>		Temp Blank: <u>(Y)</u>		S/N: <u>13049203</u>		Exp: <u>8-9-15</u>	

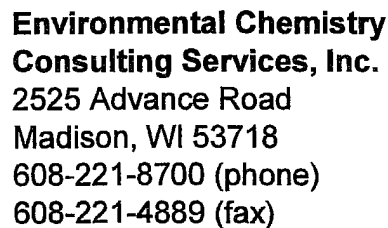


**Environmental Chemistry  
Consulting Services, Inc.**  
2525 Advance Road  
Madison, WI 53718  
608-221-8700 (phone)  
608-221-4889 (fax)

# CHAIN OF CUSTODY

Page 3 of 3

Project Number: <u>20.0151178.51</u>				Lab Work Order #: <u>A134908</u>				Mail Report To: <u>Bernard Fenelon</u>					
Project Name: <u>Wedron Silica</u>				Analyses Requested				Company: <u>GZA Geoenvironmental</u>					
Project Location: <u>Wedron, IL</u>				Preservation Codes				Address: <u>20900 Swenson Dr. Ste 150</u>					
Turn Around (circle one): <u>Normal</u> Rush				F A				E-mail Address: <u>bernard.fenelon@gza.com</u>					
If Rush, Report Due Date:				VOCs				Invoice To: <u>Same</u>					
Sampled By (Print): <u>ELLIE STAPLETON</u>				Dry Weight				Company:					
				FOC				Address:					
Sample Description		Collection Date Time		Matrix	Total # of Containers						Comments	Lab ID	Lab Receipt Time
Duplicate 2		12/4/2013 8:24		S	2	X	X					21	
WS-SB-GP-14 (6-8)		12/4/2013 9:52		S	3	X	X					22	
WS-SB-GP-14 (12-15)		12/4/2013 10:00		S	3	X	X	X				23	
Trip Blank		12/4/2013				X						24	
Preservation Codes A=None B=HCL C=H <sub>2</sub> SO <sub>4</sub> D=HNO <sub>3</sub> E=EnCore F=Methanol G=NaOH O=Other (Indicate)		Relinquished By: <u>Ellie Stapleton</u>		Date: <u>12/4/2013</u>		Time: <u>13:28</u>		Received By: <u>M. Fienlon</u>		Date: <u>12/4/13</u>		Time: <u>13:28</u>	
Matrix Codes A=Air S=Soil W=Water O=Other		Custody Seal: Present/Absent		Intact/Not Intact		Seal #s		Receipt Temp: <u>5/10/30492013</u>		Temp Blank <u>(Y) N 3.40c</u>		<u>exp 89-15</u>	
		Shipped Via: <u>Express</u>											

Page 1 of 1

Download this form at [www.eccsmobilelab.com](http://www.eccsmobilelab.com).



## **APPENDIX D**

**December 2013 Soil Boring Logs GP-03 through GP-06**



**GZA**  
**GeoEnvironmental, Inc.**  
*Engineers and Scientists*

Fairmount Minerals, Ltd.

Wedron Silica Co.

Wedron, Illinois

Boring No.: WS-SB-GP-03

Page: 1 of 1

File No.: 20.0151178.50

Check: Bernard Fenelon

Contractor: Direct Push Analytical Corp.

Foreman: Scot Faber

Representative: Chris Ainsworth

Date Start/Finish: 12-3-13 / 12-3-13

Boring Location: 4,000-Gal USTs NW

GS Elev.: 534.1' Datum:

Auger/  
Casing

Sampler

**GROUNDWATER READINGS**

Type: Geoprobe Dual-Tube Date Time Depth Casing Stab

O.D. / I.D.: 6" 2"

Hammer Wt.:

Hammer Fall:

Other:

Depth, (ft)	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	No.	Pen./ Rec., (in)	Depth, (ft)	Blows, (/6")	Field Test Data				
1	1	48/25	0-4		PID: 10.4 88.1	4" Base course 21" Very stiff, lean CLAY (CL), plastic; trace Silt; trace Sand; brown to gray at 3', dry, petroleum odor at 3'	0.3' Base Course CL		
2									
3									
4	2	48/48	4-8		1,831 40.2	37" Very stiff to hard, lean CLAY (CL); trace Silt; gray, dry, trace fine Sand layer, petroleum odor 11" Poorly-graded SAND (SP), fine; some Silt; trace Gravel; gray, dry, slightly cemented	7.1' SP		
5									
6									
7									
8						END OF BORING AT 8'	8'		
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									

**R  
E  
M  
A  
R  
K  
S**

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: WS-SB-GP-03

WELL BOR\_NEW 151178.50 DRAFT BORING LOGS, DECEMBER 2013 - WELL BOR\_NEW.GPJ, GZADEPTH.GDT 2/26/14



**GZA**  
**GeoEnvironmental, Inc.**  
*Engineers and Scientists*

Fairmount Minerals, Ltd.

Wedron Silica Co.

Wedron, Illinois

Boring No.: WS-SB-GP-04

Page: 1 of 1

File No.: 20.0151178.50

Check: Bernard Fenelon

Contractor: Direct Push Analytical Corp.

Foreman: Scot Faber

Representative: Chris Ainsworth

Date Start/Finish: 12-3-13 / 12-3-13

Boring Location: 4,000-Gal USTs SW

GS Elev.: 534.0' Datum:

Auger/  
Casing

Sampler

**GROUNDWATER READINGS**

Type: Geoprobe Dual-Tube Date Time Depth Casing Stab

O.D. / I.D.: 6" 2"

Hammer Wt.:

Hammer Fall:

Other:

Depth, (ft)	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	No.	Pen./ Rec., (in)	Depth, (ft)	Blows, (/6")	Field Test Data				
1	1	48/25	0-4		PID: 35.8	4" Base course (FILL) 21" Very stiff, lean CLAY (CL); trace Silt; brown to gray at 3', dry, trace 1/4" Sand seams, petroleum odor (FILL)	0.3' Base Course CL		
2					1,383				
3									
4	2	48/45	4-8		2,382	Hard, lean CLAY (CL); little Sand; trace Silt; gray, dry, 4" fine to medium Sand seam at 5.5', petroleum odor			
5					355.8				
6									
7									
8						END OF BORING AT 8'	8'		
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									

**R  
E  
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A  
R  
K  
S**

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: WS-SB-GP-04

WELL BOR NEW 151178.50 DRAFT BORING LOGS, DECEMBER 2013 - WELL BOR NEW/GPJ\_GZADEPTH.GDT 2/26/14





**GZA**  
**GeoEnvironmental, Inc.**  
*Engineers and Scientists*

Fairmount Minerals, Ltd.

Wedron Silica Co.

Wedron, Illinois

Boring No.: WS-SB-GP-05

Page: 1 of 1

File No.: 20.0151178.50

Check: Bernard Fenelon

Contractor: Direct Push Analytical Corp.

Foreman: Scot Faber

Representative: Chris Ainsworth

Date Start/Finish: 12-3-13 / 12-3-13

Boring Location: 4,000-Gal USTs SE

GS Elev.: 534.0' Datum:

Auger/  
Casing

Sampler

GROUNDWATER READINGS

Type: Geoprobe Dual-Tube

Date

Time

Depth

Casing

Stab

O.D. / I.D.: 6" 2"

Hammer Wt.:

Hammer Fall:

Other:

Depth, (ft)	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	No.	Pen./ Rec., (in)	Depth, (ft)	Blows, (/6")	Field Test Data				
1	1	48/25	0-4		PID: 18.4	7" Poorly-graded SAND (SP), fine; little Silt; trace Gravel; brown, dry	0.6' SP		
2					2,114	18" Hard, lean CLAY (CL); trace Sand; trace Gravel; brown, dry, petroleum odor (FILL)	CL		
3									
4	2	48/44	4-8		1,807	Hard, lean CLAY (CL); trace Sand; trace			
5					22.9	Gravel; little Silt; gray, dry, some 1/4" silty			
6						Sand seams, petroleum odor 4-6' (FILL)			
7									
8						END OF BORING AT 8'	8'		
9									
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									

REMARKS

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: WS-SB-GP-05

WELL BOR\_NEW 151178.50 DRAFT BORING LOGS, DECEMBER 2013 - WELL BOR\_NEW.GPJ GZADEPTH.GDT 2/26/14



**GZA**  
**GeoEnvironmental, Inc.**  
*Engineers and Scientists*

Fairmount Minerals, Ltd.

Wedron Silica Co.

Wedron, Illinois

Boring No.: WS-SB-GP-06

Page: 1 of 1

File No.: 20.0151178.50

Check: Bernard Fenelon

Contractor: Direct Push Analytical Corp.

Foreman: Scot Faber

Representative: Chris Ainsworth

Date Start/Finish: 12-3-13 / 12-3-13

Boring Location: 4,000-Gal USTs NE

GS Elev.: 534.0' Datum:

Auger/  
Casing

Sampler

**GROUNDWATER READINGS**

Type: Geoprobe Dual-Tube Date Time Depth Casing Stab

O.D. / I.D.: 6" 2"

Hammer Wt.:

Hammer Fall:

Other:

Depth, (ft)	Sample Information					Sample Description & Classification	Stratum Desc.	Remarks	Equipment Installed
	No.	Pen./ Rec., (in)	Depth, (ft)	Blows, (/6")	Field Test Data				
1	1	48/13	0-4		PID: 6,109	Lean CLAY (CL); trace Silt; gray, dry, trace Sand layers, petroleum odor (FILL)	CL		
2					5,424				
3									
4	2	48/48	4-8		2,511	Very stiff, lean CLAY (CL); trace Silt; trace Sand; gray, dry, fine 1/4" Sand layers, petroleum odor (FILL)			
5					10.8				
6									
7									
8							8'		
9						END OF BORING AT 8'			
10									
11									
12									
13									
14									
15									
16									
17									
18									
19									

**R  
E  
M  
A  
R  
K  
S**

Stratification lines represent approximate boundary between soil types, transitions may be gradual. Water level readings have been made at times and under conditions stated. Fluctuations of groundwater may occur due to other factors than those present at the time measurements were made.

Boring No.: WS-SB-GP-06

WELL BOR\_NEW 151178.50 DRAFT BORING LOGS, DECEMBER 2013 - WELL BOR\_NEW.GPJ, GZADEPTH.GDT 2/26/14